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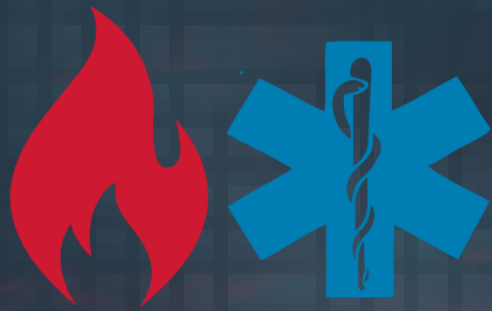
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Discovering Another New Normal

By Catherine L. Feinman



After catastrophic events, leaders consider what needs to be done to better protect their communities going forward. They also try to predict what the new normal will look like in a society that is forever changed. The 9/11 attacks spurred significant funding and resource building for homeland security efforts and instilled more situational awareness across the board – at least for a while. COVID-19 has communities once again wondering what the new normal will look like as businesses fully open and life without masks and mandates resumes.

It is difficult to know how long it will take to recover to a point where COVID is just a sidebar. However, there is no doubt that the pandemic has encouraged some systemic changes in preparedness efforts. For example, preparedness and response leaders have had many [discussions about what to expect](#) in the new normal and have created [new ways to train](#) their workforces. Using lessons learned over the past few years, the public health profession is also [finding its path forward](#) before the next pandemic or another public health emergency.

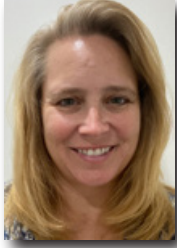
However, it is important to recognize that, although many people focus on COVID as the primary incident, secondary and tertiary incidents could create an even longer-term challenge than the pandemic. For example, research on [societal violence](#) shows that rates of violence increased significantly since the beginning of the outbreak. The [Nashville Christmas Bombing](#) in December 2020 is just one of many violent attacks that added to the growing statistics in the past couple of years.

Because of the interconnectedness of so many aspects of society, the authors in this July edition of the *Domestic Preparedness Journal* help readers better understand what is needed in the new normal: [a common operating picture](#), [predictable lifelines](#), new or repurposed [technological tools](#), and more. The new normal after COVID will be quite different from the years after 9/11. However, with critical thinking, research, and innovation, communities will discover their new normal – again.

Catherine L. Feinman, M.A., joined Domestic Preparedness in January 2010. She has more than 30 years of publishing experience and currently serves as Editor of the Domestic Preparedness Journal, www.DomesticPreparedness.com, and the DPJ Weekly Brief, and works with writers and other contributors to build and create new content that is relevant to the emergency preparedness, response, and recovery communities. She received a bachelor's degree in international business from University of Maryland, College Park, and a master's degree in emergency and disaster management from American Military University.

What Preparedness & Response Leaders Need in the New Normal

By Catherine L. Feinman



The past few years have challenged emergency preparedness and response professionals around the world. Events that have been called unprecedented, record-breaking, or once-in-a-lifetime are becoming commonplace. Just a few defining events that spurred changes in preparedness efforts include the 9/11 attacks in 2001, Hurricane Katrina in 2005, Hurricane Harvey in 2017, and the COVID pandemic that began in 2019. Today's leaders need to be forward-thinking, equipped with the right tools, and prepared to manage the inevitable uncertainties that lie ahead. Leadership frameworks and industry traditions may need to change to better plan for, mitigate, and manage emergencies and disasters that occur in combination or that span large geographical areas.

To address the challenges that emergency preparedness professionals face in an ever-changing threat environment, the Domestic Preparedness Journal hosted a panel discussion at the Texas Emergency Management Conference in San Antonio, Texas, on June 2, 2022. The multidiscipline panel was moderated by James (Jim) Featherstone, a principal consultant at a crisis management consultant agency, Themata Strategic LLC. Participants included the Texas Division of Emergency Management (Deputy Chiefs Suzannah Jones and Country Weidler), Texas Department of Public Safety (Major Rhonda Lawson), Dallas Fire-Rescue (Chief Dominique Artis), Amarillo Public Health (Cassie Stoughton), and Texas Army National Guard, Director Operations, Plans and Training (Colonel Robert Eason). This article summarizes the panelists' responses to questions that leaders should be asking themselves.



Leadership Frameworks and Management

When it comes to emergency and disaster readiness, many leaders have a defining moment that changes how they manage future events. Working in Texas, many of the panelists saw Hurricane Harvey as that moment where change was needed, others had that moment when they responded to the 9/11 attacks or Hurricane Katrina. Although any disaster response has a reactionary component, more effort needs to be placed on preparedness to mitigate the event's devastating effects.

Good leadership involves working with other leaders who may have different leadership styles and different terminology. Therefore, an effective leadership framework should include flexibility in a fluid environment and the ability to communicate effectively, create teams, share resources, and prioritize tasks. As the leadership framework expands and more partners are added, panelists emphasized the need to demonstrate "ego-less leadership," to "do more with less," and to be able to work in "shades of gray."



Source: Frank Hicks/Texas Division of Emergency Management (May 2022).

Industry traditions, however, may hinder some preparedness efforts. For example, repeatedly doing the same actions and expecting the same results for different events or not prioritizing funding needs (e.g., repairing critical infrastructure) can have devastating results. Another tradition that could hinder efforts is expecting an event to progress through the normal disaster phases. Whether managing simultaneous events or a disaster within a disaster, leaders often find themselves working within multiple response phases at the same time.

Raising the Bar to Meet Current Needs

In the new normal, the threat environment is evolving, with emergencies and disasters occurring in various combinations and often spanning large geographical areas. In addition, the workforce is shifting, with seasoned professionals retiring or changing careers and a younger generation taking their places. In this environment, good relationships are critical. Establishing a solid command structure, acquiring resources, creating mutual aid agreements, and building a trained and competent workforce all require establishing a broad network across public and private sectors, professional organizations, academia, etc.

To bridge the generational and cultural gaps within the workforce, leaders must understand the differences. Currently, there may be five different generations working in the same organization with five different ways to communicate. However, how an older

generation teaches is not necessarily how a younger generation learns. The digital age and career aspirations of the younger generation create a need to recruit in nontraditional places and instill a strong work ethic. When targeting a generation that is likely to change careers multiple times, leaders should reexamine their recruiting efforts and find new ways to attract, train, and retain a strong workforce and pool of future leaders.

Considering recent crises, the panelists have been taking steps to adapt and mitigate future threats. For example, panelists described a paradigm shift after Hurricane Harvey as they began looking at all the roles that are needed during a disaster and all the key stakeholders who should be invited to the planning table (e.g., law enforcement, supply-chain managers, fire, emergency medical services [EMS], military, private sector). One training gap mentioned was the fact that fire, EMS, law enforcement, and military are all required to do basic training before making life and death decisions, but emergency managers do not have the same type of basic training before they begin making critical decisions for the safety of their communities.

The panelists shared their greatest concerns – the things that keep them up at night.



Source: Frank Hicks/Texas Division of Emergency Management. (May 2022).

Biggest Concerns vs. Biggest Positive Impact

Preparing for a crisis requires leadership to consider many factors and avoid getting tunnel vision. The panelists shared their greatest concerns – the things that keep them up at night. These concerns include:

- The safety and well-being of their personnel;
- The speed at which they can assemble teams and deploy personnel and resources;
- A line-of-duty death;
- Intentional mass casualty attack;
- The ability to ensure that the day-to-day tasks are completed even during an emergency;
- The resilience of staff; and
- The knowledge that any major disaster can happen at any time anywhere.

The panelists also shared the changes that they would recommend for delivering the biggest positive impact on community preparedness. These recommendations include:

- Reading and learning as much as possible to build critical thinking skills;
- Getting out of siloes to build good relationships;
- Focusing on partnerships and flexibility;
- Knowing how to exercise scalability at the state and local levels before an event occurs;
- Making it easier to scale up operations by communicating and collaborating between departments during an event;
- Looking at what each stakeholder group has in common and identify the strengths and capabilities of each;
- Not overlooking mental health emergencies;
- Expanding training opportunities that include all key stakeholders; and
- Listening to other points of view.

True leadership is not about giving orders. It is about building relationships, communicating effectively, and collaborating extensively. It also includes a lot of learning and a lot of listening to build critical thinking skills and make the best decisions for each incident. Planning in siloes and not continually listening and learning from others will negatively affect response operations during a disaster. As Featherstone described it during the panel discussion, a leader that does not read can be compared to a person “stepping across a minefield without a map.”

Catherine L. Feinman, M.A., joined Domestic Preparedness in January 2010. She has more than 30 years of publishing experience and currently serves as Editor of the Domestic Preparedness Journal, www.DomesticPreparedness.com, and the DPJ Weekly Brief, and works with writers and other contributors to build and create new content that is relevant to the emergency preparedness, response, and recovery communities. She received a bachelor's degree in international business from University of Maryland, College Park, and a master's degree in emergency and disaster management from American Military University.

“Boot Camp” for Emergency Managers

By David Covington



In most fields, basic training is part of the learning process. Fire, law enforcement, the military, and other disciplines have training academies for building competencies and testing new recruits. An exception to these types of requirements is the field of emergency management. Some emergency managers come from other fields such as fire and law enforcement, while others come straight from college with no boots-on-the-ground experience. This discrepancy leaves a learning gap that the Texas Division of Emergency Management (TDEM) is seeking to fill.

A new recruiting strategy that TDEM is implementing includes putting prospective candidates through a 32-week training academy that is being created for the purpose of better preparing emergency preparedness professionals to fill various roles in emergency management. Unique to this program is its integration of emergency medical services and basic woodland firefighting to equip emergency managers with additional skills that can be used during emergency and disaster response efforts.

Learn about a new training academy model that will prepare prospective employees for the emergency management field.

The academy course schedule will include a mixture of classroom and hands-on training and will be broken into 10 modules:

1. Personal Development
2. Emergency Medical Technician (EMT)
3. Foundations of Emergency Management
4. Pre-Disaster Hazard Mitigation
5. Preparedness
6. Response
7. Disaster Recovery Task Force
8. Recovery
9. Post Disaster Hazardous Mitigation
10. Capstone

The first academy class is expected to begin in August 2022 with 24 students comprised of high school graduates, college graduates, military veterans, and those changing



careers. At the end of the 32-week academy training, graduates will receive a certificate for completing the National Emergency Management Basic Academy (NEMBA), will have completed the FEMA Professional Development Series (PDS) and the FEMA Advanced Professional Series (APS), and will be certified as EMTs.

The success of the first academy cohort in August 2022 in San Antonio will set the stage for the next steps. Although the first cohort will be specifically for potential TDEM employees, [Chief Nim Kidd](#) is looking to open the program to other agencies and jurisdictions in Texas and beyond.

Emergency management degree programs provide a lot of great information but do not provide the real-world experiences and hands-on training that the new academy will offer. When a graduate has the street credibility of EMT and wildland fire experience, they will be better prepared to fill response gaps that frequently exist when deploying to emergencies and disasters. By creating a curriculum to standardize the training of new recruits, TDEM is providing a new pathway to emergency management.

Listen to an interview with the author for more information about this new training academy [HERE](#).

David Covington currently serves as the Emergency Management Academy Director at the Texas Division of Emergency Management. He is a Schertz Fire Rescue Chief Emeritus and previously served as training chief at the San Antonio Fire Department to lead development of the program and curriculum. In addition to his fire service, he served as a master instructor for the U.S. Department of Transportation Federal Highway Administration.

Public Health Preparedness – Finding Its Path Forward

By Raphael M. Barishansky



Emerging from the events of 9/11 and the subsequent Ameri-thrax attacks, the discrete discipline of public health preparedness has emerged, matured, and, some would say, even come into its own. Before the 9/11 terror attacks in the United States, there was not as much focus on public health preparedness as a distinct discipline. Although there had been instances where public health was at the forefront of emergencies both domestically and internationally, the planning and infrastructure for public health emergency response were not funded and not in place.

In the post-9/11 era, federal, state, and local health have invested heavily in public health preparedness programs. These investments and planning efforts have focused on:

- Interactions with other emergency response entities,
- Compliance with the Incident Command System (ICS) and National Incident Management System (NIMS) in state and local health structures,
- Exercising and demonstrating emergency plans to test staff and systems capabilities, and
- Recruitment of subject matter experts in public health preparedness to fill health agency roles.

Public Health Emergency Response

The years since then have seen various public health emergencies that have been handled with mixed results. Emergencies such as SARS, H1N1, and even Ebola brought various response measures specific to public health into focus. These emergencies also stressed the need for communication with other disciplines (e.g., emergency management and emergency medical services) and a distinct need for response funding.

These emergencies also revealed some cracks in the foundation of public health preparedness. One of these gaps was in the federal funding specific to preparedness activities such as plan development, emergency exercises, and laboratory and epidemiological equipment rather than for actual emergency response – for example, Public Health Emergency Preparedness (PHEP) and Cities Readiness Initiative (CRI). This gap has led to a disease du jour approach to public health emergency response funding separate from the preparedness funding streams (PHEP and CRI) and brought with it specific limitations and definitive deadlines for utilization. This approach was seen during H1N1, Ebola, and Zika. Additionally, these response funds help augment short-term capacity but are so time-limited as to prohibit building public health infrastructure and future capacity – or even maintaining the capacity achieved during the response phase.

Another crack in this preparedness foundation is that many public health emergencies evolve before the state and local health departments have the time to enact various contracts, formal agreements, and even memoranda of understanding necessary to respond adequately. As such, these entities have, in the past, been unprepared to move forward with various administrative preparedness activities. The all-hands-on-deck approach to large-scale emergencies was a final area where public health had to learn its lesson. Health departments typically only train specific personnel in critical areas such as the ICS and event-specific contingency plans. This training gap has resulted in health departments limiting their emergency response personnel and capacity to only a specific portion of their agency staff.

COVID-19 Realities

The emergence of COVID-19 pushed agencies to reexamine various foundational elements of their public health preparedness efforts to date, including but not limited to:

- Contingency plans and whether they took into account what could happen;
- Relationships with other disciplines (e.g., emergency management) and whether each stakeholder understood the others' capabilities and capacity;
- The appropriateness of all the assumptions made to date regarding public health preparedness; and
- Further understanding of the nature of [healthcare coalitions](#) in a prolonged public health emergency response.

Although each of the specific facets mentioned above is significant, one area that has seen both successes and challenges is the blurring of the lines between emergency management and public health preparedness during the COVID-19



(Source: Baltimore County Government, December 23, 2020).

response. Typically, pandemics are the purview of public health authorities, with emergency management playing a supporting role. However, the overwhelming nature of COVID-19 combined with many atypical areas made this incident unique. Some local, regional, and state jurisdictions saw relationships begin with a lack of understanding about distinct roles and responsibilities in supply-chain management and overall incident management responsibilities.

In addition, the COVID-19 response has already seen a bolus of multiple funding streams that concentrate on critical response areas such as workforce development, necessary laboratory and epidemiological enhancements, and even data modernization. State and local health departments should take the opportunity to examine these funds and determine how to utilize them best to strengthen core public health efforts. As a result, public health agencies would be better prepared to deal with large and small emergencies and enhance their capacity for “day-to-day public health.”

Key Questions Decision-Makers Should Ask Themselves

The events of the last two-plus years have raised multiple questions, including:

- Will new and existing funding from the Centers for Disease Control and Prevention (CDC)/ASPR to state and local health departments include the lessons learned from COVID and other emergencies?
- Will the CDC funding have a built-in response funding mechanism?
- Will COVID spur the CDC to revise/modernize its preparedness capabilities?
- What does the future look like for the relationship between emergency management and public health preparedness?
- Like many public health emergencies, COVID-19 significantly affected persons of color, under-resourced communities, and persons with disabilities. How can we ensure that future emergency preparedness planning efforts begin to focus on these areas holistically?
- Will communities look to the lessons learned from COVID and move toward a greater state of resilience as opposed to focusing on response?

Decision-makers in the public health preparedness space must now analyze what went right and what did not. They need to determine which investments met their stated deliverable of making state and local health departments more prepared and which did not. They also need to determine if the existing relationships between the public health preparedness discipline and emergency management are sufficient and what to do about them if they are not. These and so many other areas require critical examination with an open mind. Now is the time for such introspection.

Raphael M. Barishansky, DrPH(c), is a consultant providing his unique perspective and multi-faceted public health and emergency medical services (EMS) expertise to various organizations. His most recent position was as the Deputy Secretary for Health Preparedness and Community Protection at the Pennsylvania Department of Health, a role he recently left after several years. He is also currently a doctoral candidate at the Fairbanks School of Public Health at Indiana University.



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Societal Violence & Its Impact on Critical Infrastructure

By Timothy Scarrott & Nathan DiPillo



The “new normal” following the COVID-19 outbreak is still evolving. Although some people have welcomed the relief from many years of commuting and focused on personal growth and time with family, others have become disenfranchised, isolated, depressed, or lack purpose and empathy. As the United States reels from the recent high-profile active shooter incident in Uvalde, Texas, concern among Americans is growing.

COVID-19 has increased the risk of psychiatric disorders, chronic trauma, and stress, which eventually increase suicidality and suicidal behavior. In 2020, violent crime rose 5%, and homicide jumped almost 30%. In 2021, incidents of crime continued to grow. A return to normal is becoming increasingly deadly as incidents impact K-12 schools, subway trains, and city streets across the country. In addition, experts and researchers contend that COVID-19 has caused an increase in violence during the pandemic, which includes active shooter events and targeted violence events.

Simultaneous to this dangerous trend is a lack of awareness or response to glaring warning signs and statements of harm called leakage. Warning signs are often ignored or missed in the overload of social media interactions, not reported, or not adequately addressed by security or law enforcement. In addition, law enforcement is too often missing the mark in incident response, as demonstrated in Uvalde. As a result, violence is rising, and societal stakeholders are looking for answers.

A Statistically Significant Threat

Active shooter events have been increasing exponentially over the past two decades. While the most recent events drive media attention, it is crucial to understand how these events are evolving. The 2000-2013 FBI Active Shooter Report demonstrated an increase from 6.4 incidents per year in the first half of the study to 16.4 incidents per year in the second half of the study. The 2020 FBI Active Shooter Report indicates active shooter events have increased 100% from 2016 to 2020, totaling 40 active shooter events in 2020 and 61 incidents in 2021. This report does not include school shootings, but Education Week cited 10 active shooter incidents at K-12 schools alone.

The disparity in what qualifies as an active shooter makes data-driven risk quantification challenging or impossible. Workplace violence is increasing, and both men and women are victimized on the job by bosses, coworkers, and abusive partners. Mass casualty incidents such as the Boston Bombing, Las Vegas shooting, and Pulse nightclub shooting demonstrate the widespread threat to society. However, the mainstream media drives news with buzz words like active shooter, active assailant, and mass shootings.

At the same time, politicians promise that red flag laws and gun control will end the epidemic of violence.

Key Terms & Examples

It is essential to know the terms and definitions to understand and connect cascading impacts of social violence and critical infrastructure. However, the widespread use and misapplication of the term active shooter can lead to ambiguity and a lack of understanding of an active shooter event. A better understanding of these actions could lead to better pre-event discovery data points to stop violence before it happens. The following four terms are simplified (click the hyperlinks for more in-depth definitions and information):

- Terrorism – violent criminal acts to further ideological motivations, including hate, politics, religion, or other factors;
- Active shooter – firearms violence where the location is selected based on density, without a direct connection between the attacker and the victims;
- Targeted violence – violence when the relationship between the attacker and victim is known or reasonably should have been known; and
- Active assailant – an attacker using any weapon to cause property damage or bodily injury to one or more persons.

Following are some case studies where the above terms have sometimes been misapplied:

- At a Buffalo, New York Supermarket in May 2022, an 18-year-old shot and killed 10 people in an active shooter incident. The gunman’s manifesto indicated clear warning signs, and the U.S. Department of Justice is prosecuting the incident “as a hate crime and an act of racially-motivated violent extremism.”
- The May 2022 attack in Uvalde, Texas, was an active shooter event but was motivated by hate. The attacker threatened to “kidnap, rape, or kill,” and numerous warning signs were missed. The U.S. Secret Service has identified that attacks inspired by “misogynistic extremism” has grown since 2014.
- A shooting in Houston, Texas, on March 16, 2022, was initially believed to be an active shooter when a suspect entered the building and murdered his boss. This incident is an example of a targeted violence incident.
- The April 3, 2022 shooting in Sacramento, California, resulted when two rival gangs opened fire on each other with more than a hundred shots fired and multiple victims. This incident was a gang-related mass shooting but not an active shooter incident.
- The 2015 San Bernardino shooter incident was perpetrated with firearms, and the attackers knew their victims. Some contend the Inland Regional Center of San Bernardino was likely not the intended target but may have

been triggered by holiday decorations. The attack was undoubtedly an active shooter but also an act of terrorism and hate-motivated.

- The Boston Bombing injured 264 people and was motivated by religious ideology and retaliation for U.S. involvement in Afghanistan and Iraq. This was a *terrorist* event.

The term societal violence encompasses the totality of violence facing communities anywhere and calls society to action. Although large-scale incidents capture national media attention, some people believe they are statistically not at risk personally. However, given the increase in violent crime over the past several years and the likelihood of crime continuing to rise post-COVID, the danger is real and should not be ignored. Three case studies highlight the threat to unsuspecting victims in incidents that garnered much less attention than Uvalde:

- In April 2022, Jamari Cortez Bonaparte-Jackson was only 12 years old when he was shot and killed at Tanglewood Middle School, South Carolina. Authorities reported that he was shot at least once by another student, and the boys knew each other. However, the motive is unknown as the community questions why “Mari” was killed and how a 12-year-old possessed a firearm on a middle school campus.
- In November 2021, retired Oakland, California Police Captain Ersie Joyner was not aware he was being targeted for an afternoon robbery in the moments before armed assailants accosted him. When the attackers said they would shoot him to take his vehicle, Joyner believed his life was in danger. He drew his weapon, killing one attacker and being wounded multiple times in the exchange of gunfire.
- Kate Steinle was walking on Pier 14 in San Francisco with her father and a friend when Jose Inez Garcia-Zarate fired a pistol. The bullet hit a wall before striking Steinle and killing her. Garcia-Zarate was a convicted felon who was in the U.S. illegally. He said he was wandering around San Francisco after taking sleeping pills he had found in a dumpster, then found a pistol but had no recollection of firing the gun.

Societal violence is causing economic and psychological harm and taking lives at increasing rates. As societal violence rises, the emerging impacts on U.S. critical infrastructure are another growing challenge.

How Societal Violence Impacts Critical Infrastructure

Case studies and examples of violent crime demonstrate the impact on human life. The cascading effects of COVID-19 on increasing rates of violence cannot be understated. Societal violence directly impacts at least 6 of the 16 critical infrastructure sectors, with the potential to directly impact all of these sectors.

The Emergency Services Sector (ESS) is responsible for a wide range of prevention, response, and recovery operations. The ESS comprises five distinct disciplines: law

enforcement, fire and rescue, emergency medical services, emergency management, and public works. These are the first responders to violent incidents, and the pandemic has particularly impacted this sector. Increases in violence and mass casualty incidents deplete already overwhelmed local resources. For example, San Bernardino paid \$4 million to respond to the terrorist attack. The lack of funding and resources results in many police departments, including Austin, Texas, no longer responding to “non-life threatening” 911 calls.

The Healthcare and Public Health Sector primarily comprises privately owned and operated assets. This massive industry accounted for almost 20% of the U.S. gross domestic product in 2020, totaling approximately \$4 trillion. This sector affects the other sectors of the economy, is responsible for the nation’s health, and is impacted in several distinct ways. Healthcare workers are subjected to violence at increasing rates. According to the FBI, there have been 28 active shooter events in or at health care facilities since 2019. Moreover, as violence and the impact of violence increases, this sector is responsible for continuing the immediate treatment and long-term care of victims of violent crimes.

The Financial Services Sector includes thousands of repository institutions, ranging from the world’s largest global companies to small community banks. In 2022, the economy has been slow to start, with a recession looming as workers are not returning to work, inflation is growing, and manufacturing is falling. Workplace violence is a significant contributor to workplace deaths and illnesses, with an estimated cost of occupational injuries and fatalities totaling between \$250 and \$330 billion per year. In addition to the potential direct impact of violence on or including repository institutions, the economy is declining, and costs related to violence are rising, constituting a significant risk to the Financial Services Sector.

The Commercial Facilities Sector comprises buildings and properties including retail, entertainment, outdoor events, convention centers, apartments, and more. Many people are at or traveling to commercial facilities when not at home for various reasons. These spaces tend to provide accessible opportunities for criminals because they are unsecured public areas. Commercial facilities are also where most people work with organizational conflict and workplace violence, which impact daily business safety, culture, and financial viability.

The Government Facilities Sector includes local, state, federal, and tribal facilities such as government buildings, courthouses, federal law enforcement, special-use military facilities, and facilities within the Education Facilities subsector. Government locations often feature robust security technology and personnel but are not immune to the direct or indirect impact. For example, in 2020, Portland, Oregon, was besieged by protestors who barricaded the courthouse and attempted to set it on fire with federal officers trapped inside. In addition, the Education Sector is directly and indirectly impacted by violence at increasing rates worsened by the pandemic.

The Transportation Systems Sector is critical to infrastructure by facilitating the movement of people and goods locally, nationally, and internationally. This sector includes more than 4 million miles of roadways, rail, postal and shipping, aviation, and mass transit systems. Impacts to the transportation sector range from the 9/11 hijacking attacks to protestors shutting down freeways. The New York transit system has long been regarded as one of the most dangerous in the nation. On April 12, 2022, a gunman opened fire on a Brooklyn subway during rush hour, shooting 10 people.

Where to Go From Here

The COVID-19 “new normal” is exacerbating societal violence. Two and a half years of illness and death, mandates, isolation, reduced social interaction, joblessness, business closures, economic impacts, and more are creating growing challenges to people and society. These factors have increased mental health concerns, depression, anxiety, suicidal behavior, and violence.

The cascading impacts of violence begin with the people directly affected by the incident, extending to critical infrastructure impacts and ultimately affecting the nation and the world. These critical infrastructure impacts have a direct effect on how society thrives. The media buzz and clickbait steer the narrative while businesses, corporations, schools, and local, state, and federal law enforcement work to mitigate the potential effects of violent incidents.

Many actions can reduce violence in society. For example, individuals can positively interact with people at school, work, and elsewhere. Positive interaction can build empathy and reduce the impacts and violence stemming from trauma, stress, and anger exacerbated by COVID-19. In the workplace, schools, and organizations, follow health and safety protocols to reduce hazards and learn how to take part in creating safer organizations. See something, say something is a nationwide effort to help people be alert and aware of warning signs. Any social media posts that include threats or speech that sounds like extremism, terrorism, targeting people or places, or an indication of violence, should be reported immediately.

Understanding what to do when exposed to a violent incident can make a difference. The Department of Homeland Security’s Run Hide Fight initiative can reduce the impact of an active shooter event and help keep people safe. The Stop the Bleed program is a nationwide initiative to help save lives. Lessons from the Boston Bombing and other incidents demonstrate that bystanders can act before professional help arrives. These types of skills can help in any situation where someone is injured.

Training for law enforcement, including incident response and decision making, will help increase the speed and effectiveness of the response. Case studies and investigations of incidents help shape training and policies to prevent the types of errors made in Uvalde. Federal and state efforts include federal law requiring “federally licensed firearms dealers (but not private sellers) to initiate a background check on the purchaser prior to sale of a firearm.” In addition, a June 2022 bipartisan effort to reduce gun violence includes a discussion of how to shape red flag laws to take action when violence is imminent.



There is no single answer or solution, but it is clear that society needs to prioritize health and safety as part of a holistic approach to reducing societal violence. Being societal stakeholders empowers everyone to create a culture of safety, build empathy, be aware, and report warning signs.

Tim Scarrott is a former police officer, U.S. Army combat veteran, tactics instructor, corporate consultant, and expert in workplace violence and active shooter. He has worked with hundreds of military, law enforcement, and private sector personnel throughout the U.S. He is a published author and has served as a guest instructor and guest speaker at several conferences. He is the founder of Project Shield Risk Assessment and Mitigation, a solution to reduce organizational conflict, insider threat, and workplace violence.

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Four Takeaways From the Nashville Christmas Bombing

By Robert F. Kelly & Dean C. Alexander



At approximately 6:30 a.m. (CST) on Christmas morning 2020, Anthony Quinn Warner's explosives-laden RV and Warner himself (identified through his remains) [detonated](#) in downtown Nashville, Tennessee, near the AT&T building. The blast hospitalized three and caused extensive property damage and disruptions to telecommunications systems. In addition to the substantial explosion and extensive damage and impacts, the case drew worldwide interest due to the bizarre precursor to the attack. Before the attack, a speaker attached to the RV issued warnings in a digital female voice to leave the area. The RV also broadcasted the 1964 hit song "[Downtown](#)" by Petula Clark, which [CNN observed](#) is "about how the bustle of a city can cure a lonely person's blues." The investigative determination was that Warner's act – including the building of the explosive device – was [not terrorist](#) in nature and that he was a lone actor.

Targeted violence incidents involving motivation-elusive lone actors, such as Warner, present numerous additional challenges to investigations and proactive risk management efforts in an already complex field. They may not present as many proactive intervention opportunities as one may see unfold, for instance, during the process of online radicalizations of extremists. The Southern Poverty Law Center has noted this difficulty, raising concerns regarding the increasing prevalence of lone wolf and [leaderless resistance](#) attacks. Authorities have trouble disrupting such attacks because, without the presence of multiple conspirators, it is more difficult to learn of and penetrate plots during their formation. For example, leadership resistance emerged as a countermeasure by the [Ku Klux Klan](#) due to the prevalence and frequency of penetration into their networks by law enforcement.

With lone actors, the absence of multiple conspirators lessens opportunities for pre-attack interventions by decreasing the chances for the plot to be leaked in its formational stages. However, these plots may still be discoverable in advance. Anthony Quinn Warner's 2020 Christmas Day bombing in Nashville, Tennessee, serves as an illustrative case-in-point as the police received accurate information regarding Warner's activities months before the attack. Ultimately, problems in communication and follow-up led to a missed proactive prevention opportunity. This article examines Warner in the context of the variables used in the FBI's June 2018 release [A Study of the Pre-Attack Behaviors of Active Shooters in the United States Between 2000 and 2013](#) using the variables as a framework to assemble available information from open-source investigative or agency-released documents and statements, where possible, and press reports, when necessary. Although Warner was involved in a bombing, as opposed to an active shooter plot, the FBI's framework remains useful toward the overall goal of increasing success in proactively identifying behaviors prior to a mass violence incident.

Case Analysis: Examining Warner's Pre-Attack Behaviors

In analyzing this incident, the FBI – Behavioral Analysis Unit ([BAU](#)) addressed Warner's motivations, observing that "only Warner knows the real reason why he detonated his explosive device." However, they confidently noted in their assessments that the act was an intentional suicide contributed to "[by a totality of life stressors.](#)" They also assessed that Warner chose the time and location of the bombing for impact and that the bombing was not ideologically motivated. The FBI further noted that Warner's "life stressors – include[ed] paranoia, long-held individualized beliefs adopted from several eccentric conspiracy theories, and the loss of stabilizing anchors and deteriorating interpersonal relationships." [Press accounts](#) indicate a conversation between Warner and his "neighbor, Rick Laude...less than a week before Christmas," where Laude recounted asking Warner "Is Santa going to bring you anything good for Christmas?" To which Warner reportedly replied, "Oh, yeah, Nashville and the world is never going to forget me."

Warner's [criminal history](#) is limited to two years of probation for a 1978 drug charge. Regarding more recent police contacts, officials initially reported, "Warner wasn't on the radar of law enforcement before... [the] explosion." However, this was quickly called into question on [December 29, 2020](#), when released police reports (pursuant to public records requests) indicated that 16 months before the explosion, "officers visited his home in Antioch after his girlfriend reported that he was making bombs in the vehicle." Responding to public concerns, Metropolitan Nashville Police Department (MNPD) Chief John Drake commissioned a Nashville Bombing After Action Review Board ([AARB](#)) on January 7, 2021. The AARB submitted the report on May 26, 2021, to "look at what occurred, what mistakes, if any, were made in the handling of information, and whether changes to policy or procedures are needed to help keep Nashville safer."



Surveillance photo of Warner's RV (Source: Nashville Police Department, 2020).

The [AARB report](#) confirms that, on August 21, 2019, MNPd responded to a 911 call by attorney Raymond Throckmorton regarding suicidal threats made by his client, Pamela Perry. Perry, a friend of Warner's, was visibly distressed upon the officers' arrival. The AARB report further describes Perry's report to MNPd as follows:

[Perry]...was adamant about getting rid of ...[two] firearms that she said belonged to Anthony Warner...The officers stated that Ms. Perry seemed paranoid when they talked to her and she rambled about her friend (Anthony Warner) ruining her life. In addition, she showed signs of mental distress and she complained of physical distress. She said on several occasions that she felt like she was dying. She also stated that she believes Anthony Warner is making bombs in his RV at his home and she couldn't die until she saved the "innocents" from Mr. Warner.

The report states that Attorney Throckmorton is also Warner's attorney and:

[Throckmorton] told officers...that Mr. Warner frequently talked about the military and making bombs...[and that]...he believes Mr. Warner is capable of making a bomb but, he has never seen Warner with a bomb.

Additional noteworthy pre-attack activity includes two curious gift-based property deed transfers from Warner to AEG music executive Michelle Swing:

- The first transfer involved the Warner family home in January 2019, for which his mother Betty Christine Lane [sued him](#), and Swing transferred back to Lane on [July 23, 2019](#); and
- The second transfer was on November 25, 2020 ([reportedly](#), "the house in Antioch that Warner had last lived in...worth \$160,000").

[Press accounts](#) indicate Swing declined questions regarding the nature of her relationship and connection with Warner referring said questions to the FBI. There are also press reports regarding a November 2020 letter from Warner to Swing where Warner "said his basement was 'not normal' and urged her to 'take a look.'" The official sources and statements from the investigating agencies regarding the relationship and communications (letter) with Swing are limited, and publicly available electronic records of his internet search activity are not extant at this time (limiting the analysis of Warner's Planning and Preparation). However, certain pre-attack variables for Warner have already been strongly confirmed, allowing for a summary analysis of many of the pre-attack variables for Warner through a similar lens as the FBI-BAU's 2018 pre-attack study variables (see Table 1).

After reviewing the pre-attack variables in the "motivation elusive" Nashville Christmas bombing, these are the four main takeaways.

Table 1. Anthony Warners's Pre-Attack Variables Viewed Through the Parameters Featured in the FBI Pre-Attack Study	
FBI pre-attack study variable	Case Examination of Nashville Christmas Bomber Anthony Warner
Demographics	Warner was a 63-year-old white male, high school graduate, self-employed (IT consultant), relationship status unknown, with a two-year probation for a 1978 drug charge.
Stressors	Paranoia, conspiracy theories, loss of stabilizing anchors, deteriorating relationships, and a family lawsuit involving Warner's mother were reported.
Grievance formation	The motivation for the attack was not determined, but there was no evidence of specific grievances against persons or locations.
Mental health	Suicidal ideation was present, and the act was intentional.
Planning & preparation	Publicly available data is currently limited.
Acquisition	Publicly available data is currently limited.
Pre-attack behaviors & communications	<ul style="list-style-type: none"> • In January 2019, Warner transferred the family home deed to Swing. • On 07/23/2019, Swing transferred the deed to Warner's mother. • On 08/21/2019, MNPD interviewed Warner's friend Pamela Perry, who had specific allegations of bomb-making in his RV and concern for innocents. • On 08/21/2019, MNPD interviewed Warner and Perry's personal attorney Throckmorton. Throckmorton's remembrance of Warner included his military background and bomb-making, along with Throckmorton's opinion that Warner was capable of making bombs. • On 11/25/2020, Warner transferred the deed of the Antioch Home, where he lived, to Swing. • November 2020, press reported letter from Warner to Swing regarding looking in the basement • Less than a week before Christmas 2020, Warner spoke with neighbor Laude, "Nashville and the world is never going to forget me." • Immediately preceding the attack, Warner used digitized warnings via loudspeaker. • Immediately preceding the attack, Warner played the 1964 song "Downtown" via loudspeaker.
Targeting decisions	FBI (2021) concluded the location was chosen for impact but also minimizing the likelihood of injury with no evidence indicating ideological motivations.

Four Takeaways From This Review of Warner's Pre-Attack Variables

1. Concern for Fame

Warner may have had some concern or awareness of fame or infamy, making his suicidal exit from this world in a manner he knew would dominate headlines. Warner's neighbor Laude, for instance, reported such a statement to the press.

2. Targeting Decision

The FBI concluded that Warner chose the location for impact but also for minimizing the likelihood of injury with no evidence indicating ideological motivations. Warner, at the least, chose a target at a time when there would not be much human traffic in the area. He also issued preemptive blast warnings followed by a cheerful 1960s tune regarding taking one's troubles and worries "downtown." However, Warner still created a manifest risk of death and severe injury to a several-block radius in a major U.S. metropolis, but his intentions were not clearly homicidal.

3. Planning and Preparation/Acquisition

Regarding planning and preparation activities, it is difficult to analyze this variable as there is limited information currently available regarding the Warner investigation, much of which is from press sources and interviews. What is clear is that the attack required substantial long-term planning and preparation (12 months or greater), with evidence of it occurring as early as August 21, 2019 (as evidenced by the police reports of Perry and Throckmorton). Little is known about Warner's acquisition of bomb-making materials beyond the FBI's information release that he was "[acting alone](#)." By inference, it was within Warner's capabilities to organize, select, obtain, and assemble the materials he needed for a vehicle-borne explosive device.

4. Concerning Behaviors and Missed Signs

The variable related to concerning behaviors yields perhaps the most constructive learning opportunity from this incident. In the [FBI's 2018 study](#) of pre-attack variables, the authors describe concerning behaviors as "what was objectively knowable to others" before the attack. Warner's concerning behaviors objectively manifested and were reported to authorities before the attack. The concerned party reported to the police well in advance of the attack, and it was specific to the type of attack being planned. Warner's case is thus clearly identifiable as a missed opportunity, or what some researchers have termed a "[missed signs](#)" attack. Unfortunately, Warner's case is not the first where authorities have missed signs prior to an attack. For example, other prominent and recent [missed-signs cases](#) include:

- Esteban Santiago (killed five in Ft. Lauderdale in January 2017);
- Ahmad Rahimi (detonated explosives in New York and New Jersey in September 2016);
- Omar Mateen (killed 49 in Orlando in June 2016);
- Tamerlan Tsarnaev (along with his brother, Dzhokar, killed 3 and injured hundreds at the Boston Marathon in April 2013); and
- Maj. Nidal Hasan (killed 13 and injured dozens at Ft. Hood in Texas in November 2009).

As with past incidents, public concern is high regarding this missed opportunity, resulting in Nashville's formation of the AARB and its reported findings. The [AARB report](#) ultimately:

[C]oncludes that there is no way to know for sure if the suicide bombing on December 25, 2020 could have been prevented. Law enforcement followed protocols and procedures regarding the 8/21/19 incident, however deficiencies were identified in how the follow up investigation was conducted.

Follow-up concerns include, for example:

- “[I]nsufficient follow up with Ms. Perry,”
- Lack of investigative updates and documentation by the Hazardous Device Unit (HDU), including supervisory escalation and coordination with detectives, and
- Lack of a procedure to forward information for such investigations to higher leadership ranks.

To address the concerns raised by the response to pre-attack information that sources relayed to law enforcement before this attack, the [AARB recommended](#):

- Joint HDU/precinct detective investigations for all bomb incidents,
- Reinstatement of a Joint Terrorist Task Force Officer liaison position, and
- Immediate updates to executive staff regarding “any significant investigations surrounding viable threats or counterterrorism.”

The overall theme of the recommendations is improving organizational communications for significant threats.

Additional Considerations for Explosives-Based Attacks

Explosive devices, in contrast to firearms, are comparatively highly regulated. As such, simple possession-based offenses, without appropriate licensing and documentation, can trigger enforcement activity of their own accord. However, as [Dori Persky](#) at the American University Washington College of Law noted in 2013, precursor explosive materials – such as ammonium nitrate fertilizers, fireworks, pressure cookers, and diesel fuel – are legal, commonly available, easily purchased, and have frequently been used, successfully, to construct improvised explosive devices. These devices were deployed in high-profile attacks such as the Tsarnaev brothers' 2013 Boston Marathon bombing and McVeigh's 1995 bombing of the Murrah Federal Building in Oklahoma City. The roles of researchers and practitioners in preventing the next explosives-based attack are vital and interdependent. Mitigation strategies for explosive-based attacks include [restricting access](#) to necessary materials and increasing public awareness (including that of retailers of such materials) regarding the suspicious purchase and behavior patterns related to them.

National Academies of Sciences Engineering Medicine (NASEM) researchers also note that violent actors and groups adapt to regulatory countermeasures regarding bomb-making materials. Hence, a multi-chemical awareness strategy is necessary.

To help agencies stay abreast of ever-evolving threats and tactics, NASEM provided additional research [recommendations](#), including:

- Increased data collection for explosive incidents,
- Product research and development to search for potential substitute chemicals,
- A systematic scientific study to better inform regulatory thresholds for precursor chemicals, and
- Additional comprehensive behavioral research relevant to these incidents (e.g., the actors themselves and responses from policymakers, businesses, and the public).

In addition to keeping abreast of the relevant research to inform evidence-based practice, practitioners should be aware that opportunities for praxis are available through the United States Bureau of Alcohol, Tobacco, Firearms and Explosives' [National Center for Explosives Training and Research](#), which offers subject matter guidance, expertise and training support regarding these complex and multi-faceted investigations.

Concluding Thoughts

Once a preliminary investigation establishes the who (regarding the identity of an attacker), the other questions of why (regarding motive), how (regarding planning, preparation, and acquisition), and if (regarding whether potential opportunities for intervention were missed) inevitably follow. For example, if a lone actor were disciplined during pre-attack preparations, particularly regarding the actor's communications, the why for motivation can remain frustratingly elusive. Further, the if for prevention not only haunts investigating agencies but can become their public scourge when wielded by outraged communities who perceive organizational failure through the clearer picture of events illuminated by hindsight.

In Warner's case, as the AARB findings confirm, specific and credible reports of concerning behaviors were made known to law enforcement well over a year before the attack, and the agency indeed faced scrutiny. Practitioners in law enforcement, intelligence, and threat assessment/risk mitigation communities know all too well the pressures and tradeoffs regarding allocating and prioritizing their limited resources to the nearly constant influx of information regarding potential threats to community safety. While the frequent successes of threat assessment and risk mitigation seldom make headlines, successful attacks always do. Agencies must evaluate and learn from these attacks, not from the perspective of the negative judgment of one's peers but from the standpoint of collective and continuous improvement.

Considering the variables in Warner's attack and the presence of missed signs, which are heavily attributable to communications issues, the following questions focus thematically on internal and external agency communications. These questions may launch productive discussions as leaders seek to close potential gaps in their risk mitigation strategies and narrow the opportunities for nefarious actors – regardless of their motivations – to succeed in their malicious designs:

- When was the last time the agency conducted a top-down review of its multidisciplinary, multiagency threat management strategy (including the

related policies, procedures, and accountability measures) along with a status evaluation of the information flow between all relevant stakeholders?

- Should the agency instill a realistic but hopeful perspective into its organizational culture regarding its role in preventing targeted violence?
- Does the organizational culture treat information from the public and other agencies as both a precious resource and a sign of trust?
- Does the agency leverage information received to the appropriate investigative conclusion and fully document its investigative efforts?
- When was the last time the agency engaged with the community regarding signs of suspicious activities or concerning behaviors?
- Does the public know: How to make a report? How may confidentiality be protected? What to expect following a report?
- Are there any barriers – such as logistics, trust, or public confidence – that may discourage potentially lifesaving reporting to the agency?

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Dean C. Alexander JD, LLM, is the director of the Homeland Security Research Program and professor of Homeland Security at the School of Law Enforcement and Justice Administration at Western Illinois University. In addition to numerous peer-reviewed publications, he has authored several books on terrorism, including: Family Terror Networks (2019); The Islamic State: Combating the Caliphate Without Borders (Lexington, 2015); Business Confronts Terrorism: Risks and Responses (University of Wisconsin Press, 2004); and Terrorism and Business: The Impact of September 11, 2001 (Transnational, 2002). In addition, he is frequently interviewed by domestic and international media, such as the Washington Post, Boston Globe, Atlanta Journal-Constitution, Chicago Tribune, Dallas Morning News, Orlando Sentinel, Associated Press, Voice of America, Security Management, El Mercurio, Tribune de Genève, and NHK. He has provided on-air commentary for television and radio stations, including CBS Radio, Voice of America, Wisconsin Public Radio, and CB-Business.



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Creating a Common Operating Picture for Wildfire Season

By Akshay Birla



Life is beginning to return to normal following the past two years of the pandemic, but the world is still as unpredictable as ever. When it seems as though one catastrophic situation is coming to an end, another tends to emerge as the newest public safety issue. One set of threats that will persist is weather and climate-related natural disasters.

Although emergency preparedness professionals cannot eliminate earthquakes, hurricanes, freezes, and wildfires, they can take steps to mitigate the impact natural disasters have on local communities. Peak wildfire season is quickly approaching and, in states like California and Oregon, emergency personnel are reviewing and revising their procedures and protocols to counteract the inevitable. As officials and residents brace for future wildfires, it is critical for local and state emergency managers to have an updated disaster preparedness strategy and emergency management platform in place.

Officials must ask themselves how prepared their region is to respond to wildfires. To answer this question, crisis personnel often look to the most recent local or regional disaster and assess their communications, coordination, and overall response. However, focusing on a single disaster does not provide the bigger picture. In 2020, for example, wildfires caused [\\$16.5 billion in direct damages](#), leaving hundreds of thousands of Americans displaced. In addition, the dangers and damages will continue to grow as wildfires become increasingly destructive due to [wildland-urban interference](#).

For crisis teams to succeed, an actionable and updated emergency response strategy must be in place. Human activities – unattended campfires, discarded cigarettes, equipment malfunctions, and arson – cause [most wildfires](#), which can happen anywhere. Community leaders can streamline the process of maintaining situational awareness by utilizing emergency management software that allows organizations to automate workflows, organize their crisis strategy, and distribute mass notifications during an emergency. Automation enables stakeholders to collaborate more effectively in response to a crisis or emergency and develop a real-time common operational picture.

Proactive Wildfire Response

Emergency managers often have some form of response plan in place for wildfire response. However, the plan may no longer be genuinely proactive and effective. Many emergency plans have used the same documentation and antiquated processes for decades. Utilizing an emergency management platform makes it easier and quicker for community crisis managers to update the necessary elements in a disaster preparedness

strategy. Such collaboration allows local and state officials to plan the required efforts to save lives, minimize damage or property loss, and improve the continuity of business operations. A full-fledged proactive emergency response strategy should include:

- *An updated emergency operations plan* – This plan provides necessary and easy-to-follow steps during a disaster while at the same time ensuring the process meets compliance standards. The strategy must work in a situation where, if one employee is incapacitated and unable to perform their duties, another employee can immediately take over their role.
- *Updated contact information* – This information ensures that the appropriate stakeholders are contacted across multiple channels without delay.
- *Enhanced hazard mitigation plan* – This plan ensures the safety of employees, citizens, community property, and infrastructure.
- *Prioritization and allocation of local and state resources* – These efforts ensure the continuity of operations during an emergency or disaster.
- *Complete list of emergency supplies and equipment* – Along with the location of each item, this list ensures that supplies and equipment are accessible when needed.



Chalk Mt. Fire (Source: Texas Division of Emergency Management July 2022)

Successful crisis management software systems and plans are designed with a careful understanding of the needs of emergency personnel. From there, workflows are put in place to address specific needs. Before deploying any plan or system, testing procedures and operations through drills is essential. These tests should be performed regularly, especially with new personnel.

Creating a Common Operating Picture

Emergency management platforms enable local and state officials to create a common operating picture. One of the most crucial elements of emergency management is the need for effective internal and external communication networks. Emergency managers should be able to access critical data anytime and anywhere. In the event of a wildfire, officials must be able to disseminate information efficiently and effectively to the necessary parties. Any communication lapse could potentially come at the cost of human life. With so many lines of communication responding to a wildfire, antiquated systems can lead to errors and wasted time.

Wildfires require collaborative efforts across jurisdictions. To create a proactive and effective response, a common operating picture is a must.

Crisis teams need to respond to wildfires without taking time to bridge data boundaries and communication gaps while simultaneously reacting to a fire. With an emergency communication system incorporated into the emergency management platform, responders can share data and make critical workflows accessible to everyone through desktop and mobile device notifications. When correctly set up, this accessibility covers people internally and externally, so everyone is on the same page.

Building Muscle Memory

Without training and practice, the best technology will be limited in effectiveness. Proper training and exercise go hand in hand with any emergency response plan. State and local officials must be adequately trained in crisis management to have a comprehensive emergency management system. Without extensive training, a common operating picture will mean very little. Training and exercises build muscle memory and span various levels of intensity. For example, organizations may choose to use their emergency response software for daily workflows to maintain familiarity. Others may conduct regular drills and tabletop exercises. The most sophisticated organizations use extensive simulation-based technology to practice multi-disciplinary and multi-domain responses.

Emergency managers who successfully control the effects of wildfires and natural disasters must invest in an emergency management system and response plan and create organizational muscle memory. Wildfires and other natural disasters are unavoidable and will happen regardless of the precautions taken. So, having the best possible plan and response system in place is crucial for alleviating the costs, damages, and emotional toll resulting from these seasonal natural disasters.

Akshay Birla serves as the chief marketing officer at Juvare. He joined the firm in 2020 with over ten years of leadership experience in healthcare, including his tenure at The Advisory Board Company in Washington, D.C., as well as Streamline Health and Radix Health, both in Atlanta. He received his bachelor's degree in economics from the University of Chicago and his Master's in Business Administration from the Kellogg School of Management at Northwestern University.



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Making Communications a Predictable Lifeline Solution

By Charles J. Guddemi



The Federal Emergency Management Agency (FEMA) has identified seven [Community Lifelines](#) that enable the government to operate, businesses to function, and society to thrive: Safety and Security; Food, Water, Shelter; Health and Medical; Energy; Communications; Transportation; and Hazardous Material. All seven are necessary for operational success. However, often during major incidents, emergencies, or disasters, one, several, or all of these lifelines have been lost. By examining just one of these lifelines – Communications – there are numerous lessons to be learned, best practices discerned, and many gaps that need to be closed that would be geared towards shoring up a communications ecosystem that needs to be nurtured.

Emergency Communications Ecosystem – 4 Key Functions

The emergency communications ecosystem must be healthy for effective operations and situational awareness. This ecosystem includes anything organizationally that the first responder community and staff use, plus what people personally use with their family or friends. There are four key functions of this ecosystem:

- *Public-to-Government* – The first function is the ability of the public to report to the government that they need help, which usually occurs through the Public Safety Answering Point, Emergency Communications Center, or 911 call system. The evolution of Next Generation 911 is currently in progress and may already include texting with video sharing in the future.
- *Government-to-Government* – The second function is the government's response. The government often responds to that call for help from dispatchers to first responders' land mobile radios or computer-aided dispatch (CAD) to mobile data terminals. It could also be through CAD-to-CAD to other jurisdiction's 911 centers requesting mutual aid assistance.
- *Government-to-Public* – The third function is the government-to-public alert and warning system, which allows pertinent governmental agencies to send information to the public with instructions. For example, there may be a request for the public's help (e.g., a child abduction emergency alert or critical missing seniors), or there may be a request for the public to take a particular action for their safety (e.g., evacuation, shelter in place, or avoidance of an area due to police activity).
- *Public-to-Public* – The fourth function is the public's interaction among themselves. The sharing of voice, data, and video during daily activities or to share information during an incident. This function allows the government to monitor the heartbeat of the community they serve. These communications, during an incident and after validation, can serve as an essential piece of information sharing and assist in the government-to-government response phase and government-to-public alert and warnings messaging.

Enabling all four functions involves supporting the ecosystem outdoors, indoors, and in subterranean areas (e.g., underground parking lots, Metro systems). For example, the Safer Buildings Coalition is one organization committed to solving communications issues indoors. Its mission is to make everyone feel safer inside, which can be accomplished by highlighting [three pillars](#) of its public safety communications objectives:

- Mobile 911 calls need to provide locational accuracy even inside buildings.
- Mass notifications must be able to penetrate structures.
- First responder communications must work throughout entire facilities.

For a complete description of the emergency communication ecosystem, refer to the [CISA's National Emergency Communications Plan](#).

A critical factor in ensuring operational success is nurturing this ecosystem to remain healthy, robust, and, most importantly, available. This can be achieved by working closely with federal, state, and local government agencies and the private sector. However, no entity impacts the communications ecosystem more than the cellular industry. Society's overreliance on cellphones and other technological devices – professionally and personally – threatens the communications ecosystem with extreme broadband demand, especially during mass gatherings. In addition, many people do not know their phone numbers, struggle to drive home without using a mobile app, or even have difficulty performing daily functions without the assistance of Siri, Alexa, or Google. A blue-sky day can quickly turn into a black one when disruptions occur in the communications ecosystem caused by physical or virtual threats, for example:

- Critical infrastructure attack/collapse
- Malware and ransomware
- Misinformation and disinformation
- Communications loss due to operator error or improper system/device maintenance
- Inability to have additional or alternate power sources
- Interference – unintentional (e.g., not properly setting up equipment) or intentional (e.g., radio frequency jammers)

Actions Needed to Create Resilient Communications

The District's Office of the Statewide Interoperability Coordinator (SWIC) – in collaboration with the U.S. Department of Homeland Security, Cybersecurity and Infrastructure Security Agency (CISA), Emergency Communications Division (ECD) – is currently working on creating a curriculum to standardize a program first established by the military called PACE (primary, alternate, contingency, emergency). The concept is simple – there needs to be a Plan B, C, and D for continuous communications (e.g., land mobile radios, email, landline, cellphone, satellite phones, runner/messenger utilization, or designated rally points). The District will pilot the initial classes, refine the course, and make it available through ECD and FEMA. PACE planning should be a concept not only used for planned events or no-notice incidents but for everyday activities.



Muscle memory is needed to transition from one communications capability to the next without a meltdown. In addition to establishing a plan, training and exercises will be vital to this development. The challenge will be to make everyday operators as comfortable with their contingency and emergency communications options as they are with their primary and alternate solutions.

Identifying & Addressing Unique Challenges

Identifying solutions to interoperability problems is a challenge faced by many SWICs across the country daily. To address this challenge in the District, the Office of the District of Columbia's Statewide Interoperability Coordinator has created the District Communications Interoperability Strategy (DCIS).

This document is the product of numerous meetings, after-action reports review, interoperability communications survey results, governance, preparedness, and resource webinars involving District agencies, federal partners, National Capital Region stakeholders, industry, and the private sector.

The DCIS provides a roadmap on how the District will build a reliable, resilient, and interoperable communications ecosystem over the next four years. It outlines:

- 1 Vision: A reliable, resilient, and interoperable emergency communications ecosystem for the Nation's Capital
- 4 Priorities: Connectivity, coverage, situational awareness/common operating picture, cybersecurity
- 12 goals
- 72 actions required to accomplish the 12 goals

Dedicating to Close the Communication Gap

After-action reports, whether the incident is a natural disaster or a human-caused crisis, always account for shortcomings in dealing with communications, situational

awareness, and information sharing. These common themes are documented repeatedly across all professions and disciplines and throughout every geographic locality. Agencies initiate the after-action process, create improvement plans, and gain the necessary commitment from leadership yet, as a first responder community, it is difficult to break the cycle or curse of being communications deficient.

A quote that applies to interoperability is from [Gordon Graham](#), a world-renowned risk manager, who stated, “If it’s predictable, it’s preventable.” Losing electrical power, modern technologies, and communications-related equipment at some point is inevitable and thus predictable, even though the exact timing is unknown. PACE planning, other contingency plans, alternate power sources (solar, battery backups, generators, hardline solutions), and public-private collaboration are a start for building resiliency.

The government leverages numerous technologies to drive success across many missions. By collaboratively examining emerging policy trends, technology needs, and changes in the risk environment, government agencies and technology companies can shape the development of products and advance systems integration to overcome current and future security, life safety, and communication challenges.

Communication involving voice, data, and video remains a predictable lifeline gap. Therefore, there must be a dedication to:

- Committing resources for equipment maintenance and lifecycle replacements;
- Fostering relationships with neighboring jurisdictions and key stakeholders;
- Embracing change in the form of technological advancements;
- Investing in the performance of personnel by training; and
- Conducting exercises to build the necessary skill sets and reinforce muscle memory needed for performance, especially under stressful conditions.

Communications can become a predictable lifeline solution only after this battle rhythm has been established and continuously repeated over and over. Preparing for the worst must become part of the culture of the emergency communications ecosystem community, which means everyone.

Additional author’s note: As the D.C. SWIC, I wake up every morning and go to work with the hope that I am never right. I just want us all to be prepared!

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Teleforensic Tools – From Telemedicine to Law Enforcement

By Michael Melton



Technology can be a force multiplier, such as when software guides the operations of a machine capable of performing tasks in a fraction of a second that would have required minutes if done manually. In addition, an automated product's quality is often equal to or even an improvement over a manually produced product. Three less common applications of technology as force multipliers involve the use of technologies to:

- Significantly expand the capabilities of an individual at the moment of need through decision-support, often based on the results of data analytics;
- Identify needed content and remotely deliver just-in-time instruction; and
- Facilitate remote application(s) of an off-site individual's skills to on-site personnel, enabling off-site resources to be virtually in two places simultaneously. Examples include:
 - Telemedicine applications provide care to patients with an illness or for mental health care; and
 - Child molestation investigation applications enable teleforensics conducted by a remote forensic nurse through real-time support to an on-site nurse and child in a remote or rural community.

This article focuses on the above three examples of technology for expanding capabilities to on-site workers with and without employing a real-time, rich-data communication linkage to an off-site resource(s). Solutions not involving remote human-to-human support, such as an automated decision-support system or instructional resources, are also discussed.

These force multipliers can produce practical, real-world solutions for addressing some of law enforcement's more pressing challenges by identifying:

- Narrowly focused instances where telemedicine advances are being actively leveraged in operational teleforensics applications, and
- New telemedicine application support to emergency medical services (EMS) responders with the potential for enhancing on-site law enforcement personnel capabilities to process various types of crime scenes as part of their preliminary investigations.

Telemedicine and Teleforensics

Despite the substantial growth in the use of telemedicine during the COVID-19 pandemic, these solutions were not initially designed for real-time, doctor-to-patient



Michael Melton provides computer-based instruction during an exercise (Source: Melton, 2007).

connections between two locations. Instead, they were employed to facilitate consultations between two or more medical professionals. The core technology components of early telemedicine systems did not require high-speed Internet connections or streaming video. They were simply focused on providing a means for effective and confidential rich-data communications and file sharing between medical professionals working collaboratively on a patient's care from two or more locations.

These earliest telemedicine exchanges were almost always accomplished without real-time discussions. Typically, the purpose of the telemedicine connection involved either a consult by a physician with a medical specialist or simply soliciting a second opinion from a fellow physician, as may have been requested by a patient or the patient's insurance company.

The technical capabilities of early telemedicine led to the first examples of teleforensics, which involved remote medical professionals who provided an expert examination of physical evidence to on-site medical personnel as well as to law enforcement officers and criminal justice system representatives at the scene. They also facilitated the collection of expert witness statements and opinions used to support their decisions regarding the appropriateness of an arrest and criminal prosecution. In the case of a child's sexual assault investigation, for example, this remote support helped to inform the critical decision regarding the need for immediate removal of the child or children from the unsafe environment. Additionally, the complications associated with person-to-person contact related to the COVID-19 pandemic prompted a substantial change by those responsible for victim interviews to adopt an enhanced use of teleforensics as an alternative to in-person [interviews](#) in child abuse investigations.

Today, a federal grant supports the [State of Texas](#) in its use of teleforensics, providing remote specialists to assist rural health care professionals in conducting more effective sex crime investigations, especially when children are potential victims:

The Texas Teleforensic Remote Assistance Center (Tex-TRAC) was established with federal grant funding from the Department of Justice's Office for Victims of Crime (OVC) to plan, develop, and pilot test a statewide sexual assault nurse examiner (SANE) telehealth program to serve rural and underserved communities in Texas.

One additional documented example of law enforcement's significant reliance on teleforensics between field-level enforcement personnel and specialists at crime laboratories was included in the Congressional Justification for the Department of Homeland Security, U.S. Customs and Border Protection, Budget Overview for Fiscal Year 2021. On page 195, under the description of the activities of that agency's Laboratories and Scientific Services (LSS), the report states:

LSS's 24/7 Teleforensics Center (TC) provides near real-time reach back for technical advice and adjudication of presumptive screening results to field officers and agents who encounter suspect RAD/NUC threats and narcotics (chemical) threats. The TC handles on average 55 reachback calls daily and provides advice or adjudication within 30 minutes.

A "reachback" event occurs when on-site investigative personnel receive incident-specific instruction or process confirmation from off-site experts. Based on personal experiences with the implementation of an expansion of the Secure the Cities program for early RAD/NUC detection into the greater Los Angeles Area, there is the presence of shared characteristics between a reachback event and the employment of teleforensics.

Computer-Based Distance Learning at the Moment-of-Need

When the U.S. Navy began transitioning its armament of warships from large guns to precision-guided missiles, it faced some challenges related to the realignment of skill sets of onboard personnel. This problem was amplified after crew complements had been substantially reduced on modern warships over the previous era. In addition, naval ships must always be ready for warfighting, including the potential for significant casualties among their crews. As such, the Navy's plans for maintaining adequate operational redundancies called for technical cross-training so that each sailor could perform a broad set of critical tasks well beyond their primary, day-to-day responsibilities. To achieve the required performance levels, the Navy embraced computer-based, just-in-time instruction as an essential complement to other curriculum delivery and skills practice.

Bringing Technologies Together to Support EMS

In 2017, the Public Safety Communications Research (PSCR) Division of the National Institute of Standards and Technology provided funding to the University of Virginia to support the development of "[CognitiveEMS](#)." That sophisticated decision-support and

data analytics application was designed to assist EMS personnel with identifying optimum approaches to patient care at the incident scene and throughout the patient's transport to a hospital. A six-minute video during a 2021 PSCR virtual event demonstrated this application's robust functionality.

While CognitiveEMS is an outstanding example of a decision-support and data-analytics application, Emory University Hospital has embraced telemedicine as part of its development of the [Emory Rural Tele-EMS Network](#), which:

[W]ill provide telemedicine services to ambulance crews treating patients across rural Georgia. The ultimate goals of the program are to address disparities in medical care, support rural EMS personnel, and enhance access to high quality healthcare for rural patients.

All three technology components described in this article are planned for broader development over the next few years as a support system for EMS, which was defined in 2021 by the U.S. Department of Health and Human Services Biomedical Advanced Research and Development Authority (BARDA). BARDA's Pilot Statement of Objectives for a new Resource Information Tracking and Medical Communications Application ([RITCA](#)) describes the development of a network of integrated technologies for use by EMS personnel in the field, including:

- A decision-support and incident documentation system that employs data analytics to produce recommended courses of action similar to the CognitiveEMS solution;
- A telemedicine application that provides a real-time, two-way rich-data connection between on-scene EMS personnel and in-hospital medical staff both at the scene and during the transport, similar to the network that Emory University is implementing; and
- A computer-based distance learning system that can identify appropriate content for supporting the moment-of-need instructional requirements of on-site EMS personnel to provide optimum care as early in the patient contact process as possible.

Initially, this new network of systems will focus on providing support for EMS personnel to patients who have experienced either trauma or burn injuries. In November 2021, [BARDA](#) published an intent to enter into a sole-source contract with the Applied Physics Laboratory of John Hopkins University to build RITCA, which BARDA projected to take place over a five-year development and testing period.

Bringing Technologies Together to Support Law Enforcement

Following his 30-year career with the Los Angeles Police Department, this author served as a technical specialist for the National Center for Forensic Science (NCFS). In 2001, the NCFS submitted a grant proposal to the National Institute of Justice (NIJ) to fund the development of a Criminal Latent Evidence Advanced Recovery System

(CLEARs) to support field-level law enforcement personnel with preliminary crime scene investigations. At that time, the primary conclusions reflected in that grant submission included:

- A significant mismatch between desirable skill sets and critical task requirements for field-level law enforcement personnel was associated with recurring failures to identify and collect substantial quantities of available physical evidence effectively.
- As a result of this mismatch, potentially critical forensic evidence for use in either the identification or prosecution of a substantial number of serious offenders was lost or undiscovered.
- The incident-specific information about a crime, as derived from the preliminary investigation by the field officer, is the same set of data used by senior investigative supervisors when prioritizing additional detective resources needed for follow-up investigations, particularly when determining the seriousness as the first factor and solvability of the crime as the second factor.
- The third factor of susceptibility of a particular crime scene's circumstances to yield forensic evidence should also be considered, including but not limited to a determination of the following:
 - Is it a sex crime?
 - Was the suspect injured in any manner during the commission of the crime?
 - Did the victim and suspect physically struggle during the commission of the crime?
 - Did the suspect use a weapon, and was a firearm discharged?
 - Is an eyewitness or video available to allow an officer's identification of the suspect's path/actions?
 - Did the suspect consume either food or drink while at the crime scene?

NOTE: The use of data analytics for predicting the presence of latent physical evidence could begin with only anecdotal factors. However, as incident circumstances are documented over time, the accumulation of crime scene factors, actions applied, and their respective outcomes may predict outcomes from evidence-based evaluation criteria after only a few years.

- The proposed CLEARs tool could address the full spectrum of support options, including:
 - A robust decision-support and incident documentation system, which employs data analytics to produce recommended courses of action for law enforcement personnel;

- A robust teleforensics application to enable real-time, rich-data connections between on-scene law enforcement personnel and off-site subject matter experts, including options to engage detective personnel, crime scene investigation staff, or both; and
- A robust distance learning system that can identify the appropriate content for supporting moment-of-need instructional requirements of on-site law enforcement personnel, including assisting in the location of and recovery of physical and latent evidence, such as blood, fingerprints, and ballistics components from a firearm’s discharge, etc.

Conclusion and Recommendations

The NIJ’s May 23, 2022, two-part “Justice Today” podcast, entitled “[The Evidence We Leave Behind](#),” highlighted a similar but distinct field of forensic evidence research that shares many characteristics with the justice system’s employment of DNA evidence. However, instead of focusing on DNA use, these latest research efforts focus on potential forensic uses of microbial trace evidence, which involves the latent organic materials that every individual routinely deposits as each person moves around within an environment, including within the area of a crime scene. Although the deposited microbial trace evidence will not allow the specific identification of the individual perpetrator, the NIJ’s research has shown promise in using this forensic evidence as corroborative evidence.

The recently released summary of research activities conducted over the past 20 years, but especially during the past ten years, further validates the projection of an increased return on investment (ROI) from deployments of these new applications of technologies. These applications can be used at crime scenes where additional forensic evidence, especially latent evidence, can be more effectively located and collected to facilitate other suspect identifications and successful prosecutions of the perpetrators. This ROI is most prominent for crimes where a perpetrator would not have been identified without finding a cold match of DNA through the Combined DNA Index System ([CODIS](#)) or a genealogical database, or a fingerprint through the Automated Fingerprint Identification System (AFIS) or Advanced Fingerprint Identification Technology ([AFIT](#)) database.

Telemedicine capabilities as a force multiplier have increasing momentum in health care. Now teleforensics has new and exciting potential in law enforcement.

Although technical limitations (and law enforcement culture) were not ready to support the vision of the CLEARs proposal when NCFS first submitted that system to NIJ in 2001, recent developments in several key areas have removed significant barriers

to the system's development and application of its robust capabilities. For example, advances in support technologies for field-level EMS, both currently deployed and under active development, can leverage real-time decision-support, telemedicine, and moment-of-need instruction to improve the care they provide to their patients.

Since the infrastructure elements of RITCA have a close approximation to the proposed components of CLEARs, the U.S. Department of Justice should consider the simultaneous development of a parallel system. In addition, as BARDA initially selected trauma and burn injuries as the two most pressing categories of patient illness/injury for the RITCA system, NIJ and other law enforcement stakeholders could consider sexual assaults and incidents of violent crimes (especially crimes involving the perpetrator's use of a firearm) as an initial focus for CLEARs.

The potential market for CLEARs goes beyond U.S. law enforcement agencies, as these capabilities can also support law enforcement organizations in other countries. In addition, CLEARs can support fire/EMS agencies in arson investigations, private security's conduct of criminal investigations, and military police and other appropriate military service branches' investigative personnel.

In reference to the jury's acquittal of a charged homicide defendant, Senior Los Angeles Police Department Homicide Detective Larry Kallestad appropriately stated directly to this author in 2000, "You only get the crime scene once!" Although there are individual incidents where law enforcement personnel may return to the scene of a crime in search of new evidence, this statement refers to the judicial uses of physical evidence. After a crime scene has been released, any evidence acquired from a return visit would typically be encumbered by legal complications. When officers can locate and effectively recover all pertinent evidence during the initial period when the crime scene is secured, legal complications can be significantly reduced.

The area of teleforensics has seen recent technical advances, successful prototype deployments, and well-thought-out concepts and proposals. A combination of currently planned and future government-funded initiatives can be expected soon to help institute much more capable and effective remote support systems. These advancements in technology coupled with supported initiatives will further ensure the best possible outcomes across law enforcement, EMS, and many other domains.

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