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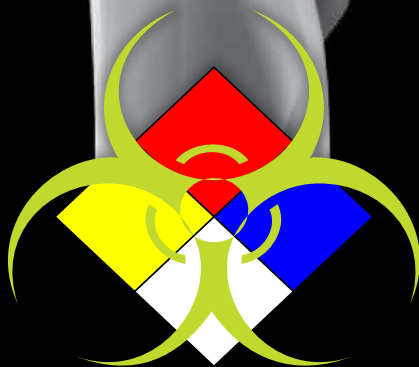
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Leveraging Learning & Teaching Opportunities

By Catherine Feinman



Each day, there are opportunities to acquire new knowledge and skills as well as opportunities to share current knowledge and skills with others. This is especially true in the emergency preparedness realm, where changing circumstances and uncertainties are the norm. However, these opportunities do not require teaching degrees or enrollment in courses, but rather simply the desire to continuously fortify and expand the base upon which new ideas, concepts, and innovations may flourish. Whether providing formal instruction or leading by example, each person can and should teach others, thereby preparing themselves and those around them for a many potential emergencies and disasters.

As the eastern United States braces for the 2018 hurricane season, the 2017 season is still fresh in minds and recovery efforts of many who were affected. For those with firsthand knowledge of these events and the challenges they posed, [sharing lessons learned](#) can help others avoid previous pitfalls and develop better preparedness programs. Such outreach efforts need to reach all members of the community – from [school-aged children](#) to [emergency preparedness peers in other jurisdictions](#). The disasters reported each year reinforce that the “it won’t happen here” thinking needs to change to “it could happen here and we need to be ready.”

As communities prepare for all hazards, there is much to learn about the constantly evolving threats, technologies, and environments surrounding them. Some technologies help [detect and identify threats](#) – for example, protecting responders from hazardous materials threats. Some technologies, like drones, are dual use. When used for nefarious reasons, they can create public safety and law enforcement concerns; however, when used by emergency responders, can also provide [life-saving situational awareness](#). As the uses, laws, and regulations surrounding such technologies change, it is critical to seek and provide support and guidance as needed. From novice to well-seasoned preparedness professionals, each person has a lot to learn and each person has a lot they can teach others.

Counterinsurgency & Emergency Management

By Roger Parrino & Terry Hastings

Counterinsurgency and emergency management are two seemingly unrelated concepts, yet they have a lot in common in terms of the strategies necessary to succeed. In each case, empowerment is the ultimate key to success. For counterinsurgency, it is about empowering the host country and, for emergency management, it is about empowering local jurisdictions. Although empowerment is the central theme, the strategies to achieve empowerment include diplomacy, relationship building, and trust.



According to the U.S. military's [counterinsurgency doctrine](#), counterinsurgency involves civilian and military efforts designed to defeat and contain insurgency and address its root causes. As it relates to the United States, counterinsurgency is generally an action that occurs overseas in response to some type of military conflict, such as the wars in Iraq and Afghanistan. Emergency management, on the other hand, is most often a domestic activity aimed at preparing for, responding to, and recovering from some type of emergency or disaster. Although counterinsurgency and emergency management are very different, they require many of the same strategies and ultimately rely on empowering others to succeed.

Strategy 1: Diplomacy

Diplomacy is the ability to deal with people and understand the various personalities, processes, and politics necessary to navigate a situation. It involves understanding rules and customs and requires an ability to employ different tactics based on different situations, with the goal of negotiating a successful outcome. Knowing when to employ different approaches is the key, as some situations call for direct confrontation while others warrant a more subtle and nuanced course of action.

When engaged in counterinsurgency, diplomacy is critical as military officials often find themselves in hostile territory trying to differentiate friend from foe. One misread of a situation could alienate important allies and jeopardize the mission. The same holds for emergency management, especially when other agencies or levels of government are deployed in support of a local jurisdiction. For example, even if the state or federal government has the resources to assume control of the disaster, it is generally not a good idea to marginalize the local officials and more effective to include them in the decision-making process.

This is especially true in a home-rule state, such as New York, where local officials have significant authority. Effective emergency managers are able to quickly size up the situation and coordinate with the various agencies and jurisdictions, working to establish a [unified command](#) structure and common objectives. In doing so, they need to exercise diplomacy and manage the personalities, processes, and politics to get the job done.

Strategy 2: Relationship Building

Diplomacy is important because it is the pathway to relationship building. Since military might can only go so far, long-term success with counterinsurgency requires the ability to

develop effective relationships in the host country. Military officials need relationships with local government agencies, tribal groups, nonprofit organizations, religious leaders, and many others. Likewise, emergency managers must take [whole community](#) approach when it comes to preparing for, responding to, and recovering from disasters.

In each case, the government is a key player but only part of the solution. Many public, private, and nongovernment organizations have important roles to play. Building relationships with various stakeholders takes time. However, when dealing with emergencies or counterinsurgency, agencies cannot afford to operate unilaterally. Accordingly, a premium must be placed on building relationships and alliances, ideally during “peace time” or before the emergency.

Strategy 3: Trust

Building effective relationships leads to trust, which may be the most important factor as it relates to the concept of empowerment. All disasters start and end locally, meaning that local agencies are generally the first to respond and the local community is left to manage the recovery long after the Federal Emergency Management Agency (FEMA) and other agencies are gone. The same holds true for counterinsurgency, in that the host country eventually is responsible for managing its affairs, and the occupying force seeks to play a diminished role over time.



Roger Parrino with members of the Afghan Army in Nawzad, Afghanistan (Source: Roger Parrino, 2009).

In each case, the goal is not to take over the situation, rather it is to provide support and guidance to help others help themselves. The host country must trust the military and vice versa, and the same is true for emergency managers deployed to assist a local jurisdiction. Once trust is established, both sides can begin working together toward a common goal, whether responding to a disaster or helping a country restore order after an armed conflict.

Although very different in many ways, emergency management and counterinsurgency are similar when it comes to the strategies and skills necessary to succeed. Empowerment is the key for each effort. Having an open mind and willingness to learn from others is a hallmark of maturity. Therefore, as the discipline of emergency management continues to mature, it is important to continuously consider new ideas and approaches.

Roger Parrino (pictured above) is the commissioner of the New York State Division of Homeland Security and Emergency Services (DHSES). Prior to joining DHSES, he most recently served as senior counselor to U.S. Department of Homeland Security Secretary Jeh Johnson. He has also worked as a civilian adviser to the U.S. Marine Corps, during which time he served four combat deployments in Iraq and Afghanistan.

Terry Hastings is the senior policy advisor for DHSES and an adjunct professor for the College of Emergency Preparedness, Homeland Security and Cybersecurity at the State University of New York at Albany.

Aiding the Response to Fentanyl With Portable Equipment

By Philip Tackett

Illegal manufacturing of fentanyl continues to rise and, with it, the dangers of clandestine drug laboratories to responders. Dangerous crime scenes like these are not limited to any one location. Responders everywhere need to prepare to encounter them at any point. Portable gas chromatography mass spectrometry (GC/MS) equipment can help hazardous materials (hazmat) response teams quickly identify white powders, like fentanyl, and associated cutting agents on-scene.

Opioids are medically used for pain relief. One of the most common opioids is [fentanyl](#) (N-(1-(2-phenethyl)-4-piperidinyl)-N-phenyl-propanamide), the effects of which are similar to heroin. Listed as a Schedule II drug under the United States Code (USC) [Title 21 Controlled Substance Act](#), fentanyl is also controlled internationally under Schedule I of the [Single Convention on Narcotic Drugs of 1961](#). It is a favored painkiller because it is fast-acting. According to the Centers for Disease Control and Prevention (CDC), fentanyl is up to 100 times more potent than morphine and [50 times that of heroin](#).

In the 1980s, fentanyl became infamous as a [street drug](#). By the 2000s, drug dealers began adding fentanyl to heroin to create an even more intense high with a rapid onset. The ease of access has turned it into a global epidemic both by users seeking the drug, and those who buy it unknowingly from dealers. Because of its high potency and the fact that users do not know how much to administer, fentanyl has led to a significant surge in overdose deaths. According to the CDC, In the United States, [overdose deaths](#) involving synthetic opioids other than methadone (drugs such as fentanyl, fentanyl analogs, and tramadol) doubled in a single year from 9,500 in 2015 to 20,000 in 2016.



Fig. 1. Fentanyl is commonly distributed as a powder and looks similar to other illicit drugs found on the streets (Source: Source: FLIR Systems Inc., 2017).

Threat to First Responders

Fentanyl is most commonly distributed as a powder, pill, or patch (see Figure 1). A person can overdose by simply touching or inhaling a small amount, presenting an incredibly dangerous threat to first responders, law enforcement officers, and even forensic chemists. “An amount the size of a few grains of sand of fentanyl can kill you,” said Drug Enforcement Agency (DEA) Special Agent [John Martin](#). If fentanyl is suspected, the [DEA recommends](#) that law enforcement officers do not field test drugs.

Hazardous Materials Response Teams should be called to assess suspected clandestine laboratories. Recommendations include:

- Be alert for signs and symptoms of exposure – including respiratory distress, disorientation, clammy skin, and pinpoint pupils.
- Keep Naloxone injectors on hand.
- Bag and destroy grossly contaminated clothing.
- Do not use hand sanitizer.
- Upon return home or to the station/base, shower with soap and water.

Chemical Identification Using GC/MS

Hazmat responders must perform quickly and with limited dexterity when wearing personal protective equipment (PPE). In a clandestine laboratory, responders are responsible for data collection, sampling, and, in some cases, analysis that leads to real-time decision-making. A gas chromatograph mass spectrometer (GC-MS) can aid responders with decision-making by delivering quick identification of illicit drugs, synthetic analogues, and associated precursors. On-scene confirmation gives responders the actionable intelligence needed for timely law enforcement and remediation.

On the street, heroin is commonly cut with fentanyl. Hazmat responders are likely to uncover both drugs in a single unknown powder sample. GC/MS is an ideal tool for clandestine laboratory assessments because it can separate multiple drugs in a single, complex sample. In some situations, fentanyl is mixed with other substances and pressed into pill form to pass as other pharmaceuticals.

One of the most common sample preparation techniques for unknown powders is a solvent extraction. This technique involves adding the powder to an organic-based solvent. A syringe is then used to extract a very small portion of the organic-based liquid sample and inject it into the GC-MS for analysis (see Figure 2).

Many chemicals can be detected and analyzed in the vapor phase, including solvents used in the production of narcotics. Pyridine is a common solvent used in the production of fentanyl and is likely to be discovered in a clandestine laboratory scenario. A GC-MS can be placed into Vapor Confirmation Mode and exposed to pyridine (see Figure 3).

Summary

The opioid epidemic is on the rise, which means that encountering fentanyl and clandestine laboratories is becoming increasingly more common. Responders require tools and resources to help safely process



Fig. 2. Direct syringe injection performed on GC-MS (Source: FLIR Systems Inc., 2017).



Fig. 3. GC-MS being used in a vapor model (Source: FLIR Systems Inc., 2017).

and secure these scenarios. GC/MS has long played a critical role in traditional laboratory-based chemical analysis and is the “gold standard” for forensic analysis. However, chemical emergencies rarely occur in the safety of a laboratory as evidenced by the rise in street drugs and clandestine laboratories. Chemical emergencies can happen anywhere, extending the need for GC/MS equipment beyond the laboratory. Person-portable GC-MS systems provide the ability to confirm clandestine production of illicit drugs via same-day analysis.

Philip Tackett, Ph.D., is the product manager for detection at FLIR Systems Inc. He earned his Ph.D. in analytical chemistry under the direction of Professor Paul Shepson at Purdue University. His research involved the investigation of tropospheric halogen chemistry and its role in ozone depletion events in the Arctic atmosphere. He also worked on the design and implementation of an onsite flowing chemical reaction chamber interfaced with gas chromatography and coupled with electron capture detection. Upon joining the FLIR team, he acted as science technical lead for multiple projects before transitioning into product management. He currently oversees FLIR mass spectrometry solutions and is a volunteer hazmat technician in his local community.



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Public Health Preparedness: Segment 1

In 2017, many natural and manmade disasters affected communities across the United States. Each of these disasters posed many public health challenges, including funding, interagency, and workforce issues. Two subject matter experts from the Minnesota Department of Health and the Georgia Department of Public Health share their lessons learned from these disasters and provide insight on public health concerns that need to be addressed. This is Segment 1 of a two-part interview.

[Click](#) to listen.



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The Need for Community Public Safety UAS Programs

By Charles L. Werner

Unmanned aircraft systems (UAS/drones) offer great value for public safety, with support and guidance needed at the local, state, and national levels when considering such systems. UAS offer a profound new view and situational awareness of significant incidents, events, and disasters. This article describes the value of UAS and provides guidance for jurisdictions considering implementing UAS programs.



In 2017, UAS proved their value during: record floods; Hurricanes Harvey, Irma, and Maria; the Mexico earthquake; record wildfires in California; the Oroville Dam incident; and presently during the volcanic activity in Hawaii. Additionally, the use of drones far exceeds just major events. Drones also provide incredible value in situations such as structure fires, hazardous material incidents, train derailments, technical rescues, civil unrest, law enforcement tactical/SWAT operations, traffic investigations, shark/shore patrols, water rescues, search and rescue of lost people (e.g., children, dementia patients, hikers), and inspection of critical infrastructure (e.g., roads, bridges, dams, electric grid, nuclear power plants).

Understanding the Value of UAS

Public safety has known the value of aerial reconnaissance but was generally reserved for extreme situations due to the high cost of manned aircraft (approximately \$600/hour). Today, drones make this aerial intelligence much more affordable, can be initiated within minutes, and can be flown effectively. More importantly, UAS provide another dimension of information that incident commanders, emergency managers, and government leaders did not have in the past. When emergency responders are not familiar with existing hazards, the lives of the responders and citizens may be at risk.

UAS also provide immediate situational awareness, “How bad is bad?” This information provides leaders with a full understanding of the magnitude of an incident and the resources needed to assist people in need and to accelerate mitigation and community recovery. The data collected becomes very important for situational awareness, historical documentation, information for presidential disaster declarations, and help with individual insurance needs.

UAS has the ability to do multiple functions such as high-resolution digital images/video, thermal imagery, GIS data, 3D modeling, catch and release, traffic forensics, and much more. For most public safety agencies that have launched UAS programs, they have flown more types of missions than they expected and more missions in general than ever imagined. Most departments start with less expensive and smaller commercial off-the-shelf UAS. As the UAS program experiences success and UAS is better understood, the type of UAS evolves to better flight platforms that can carry more specialized payloads and fly for a longer duration. In retrospect, most departments that have implemented UAS programs cannot imagine significant operations without UAS.

Guidance When Considering UAS

Starting a public safety UAS program is not as simple as “buying and flying,” and it is critical to know what is required for a public safety UAS program – for example, governance, policies/procedures, defining missions, selection of UAS and payloads, training/flight proficiency, airworthiness/maintenance, data management, and thorough documentation.

Some helpful tips:

- Engage the jurisdiction’s administration and elected officials.
- Be up front and open (transparent).
- Utilize the Airborne Public Safety Association UAS Program Standards (PublicSafetyAviation.org).
- Provide an outreach program that includes success stories from other localities (there are plenty).
- Plan to use the UAS for multiple public safety missions and with other public safety agencies.
- Where possible, consider a multidiscipline public safety UAS team.
- Where possible, consider a regional team of public safety from multiple jurisdictions.
- Develop a clear policy as to when UAS will be used for surveillance/evidentiary purposes and utilize search warrants as required.
- Provide the safeguards that will be in place to ensure personal privacy.
- Explain recording policy and have a data management program.
- Explain the risk management plan and the training/safety protocols.
- Consider involving the local American Civil Liberties Union in review of department UAS policies.
- Ensure pilots are certified and licensed under the appropriate Federal Aviation Administration (FAA) regulation.
- Operate under a Certificate of Authorization (Public Agency Flight) and FAA Part 107 rules (Private Flight Rules).

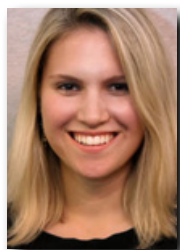
By following these guidelines, communities can have their own unmanned aircraft ready to help keep their communities safe.

Charles Werner is a 44-year public safety veteran. He served 37 years with the Charlottesville Fire Department, the last ten years as fire chief. Most recently, he served as senior advisor and acting deputy state coordinator for the Virginia Department of Emergency Management. He has also served in numerous national leadership roles on public safety technology, communications, broadband, applications and devices. Presently, he serves as chair of the National Council on Public Safety Unmanned Aircraft Systems, chair of the International Public Safety Association UAS Committee, the FAA Unmanned Aircraft Safety Team, on the Board of the National Alliance for Public Safety GIS Foundation, the National Information Sharing Consortium Advisory Council, the Association of American Railroads Public Safety Rail Advisory Committee, the International Fire Chiefs Technology Council, and the Albemarle County Sheriff’s Office Search and Rescue UAS Team.

Bringing Emergency Preparedness to City Schools

By Katelyn James

The National Oceanic Atmospheric Administration (NOAA) is predicting a near-normal 2018 Atlantic hurricane season: the formation of 10-16 named storms, with 5-9 becoming hurricanes (1-4 of these potentially becoming major hurricanes). For the past 10 years, the New York City (NYC) Emergency Management Department has been educating children in NYC schools through the Ready New York Kids Program. Each presentation focuses on three key messages: make a plan, get supplies, and prepare a Go Bag.



For the 2017 Atlantic hurricane season, NOAA predicted 17 named storms and 10 hurricanes – six of which became major hurricanes. These included Hurricanes Harvey and Irma, which made landfall on the continental United States, and Maria, which devastated the island of Puerto Rico. Whether an above, below, or average season, the unprecedented events of Hurricanes Harvey, Irma, and Maria are reminders that every storm should be taken seriously. While each household should have an emergency plan, emergency preparedness education in public schools is important now more than ever.

Preparing Children for Emergencies

In a recent survey conducted by [Princeton Survey Research Associates International](#), only four of every ten adults said they created an emergency communication plan with members of their households, leaving many families unprepared for the next hurricane. An emergency plan helps families stay in contact before, during, and after emergencies and is a

While each household should have an emergency plan, emergency preparedness education in public schools is important now more than ever.

vital tool in keeping families together. As the frequency of intense weather continues to increase, a fundamental shift in public education is necessary to adequately prepare the public for future emergencies. A major part of that education begins with children, who are particularly vulnerable during emergencies due to their dependency on parents and guardians.

According to [The United Nations Children's Emergency Fund](#), weather extremes resulting from climate change will affect 175 million children per year over the next ten years. Research also shows that [adults with school-aged children are more likely to create an emergency plan](#) than those with no children or older children. It is important to equip children with the skills to keep them safe because, when they are prepared, the entire family is prepared. Simple strategies such as designating meeting places or writing down contact numbers can contribute to keeping families together.

Make A Plan

One of the fundamentals to making a plan is knowing how to communicate before, during, and after an emergency. Each person should have at least two emergency phone numbers – one local and one out-of-state – written down in an accessible location. Having parents review this with their children is important: practice dialing the phone numbers with the children, and ensure the children know who they are calling and when they should give this number to an adult to place the call. In a world reliant on cellphones, it is important to have extra cellphone batteries and portable chargers ready and charged before a storm to keep phones running.

When addressing school-aged children, encourage them to discuss family meeting locations in the event of an emergency with members of their families. It is important to stress the need for at least two meeting locations. Although some emergencies, such as fires, may lend to family members meeting at a local park immediately across the street from their home, other emergencies, such as flooding, may require a meeting location outside the affected area.



Katelyn James teaches K-2 students about the keys to making an emergency plan during a presentation in Staten Island, New York (*Source: NYC Emergency Management, January 2015*).

Get Supplies

Stocking supplies that may be needed after a hurricane has passed is also imperative. For example, during Hurricane Irma in 2017, families whose homes were not directly impacted by the storm were still affected afterward: an inability to access food and water due to power outages; and impassable roads caused by flooding or downed trees. Families should have up to one week of supplies, including water, nonperishable foods, flashlights, batteries, first aid kits, extra medicine, extra cellphone batteries, and pet food.

Pack a Go Bag

When a town or city issues an evacuation order, it is critical for residents to follow it. To prepare for such circumstances, children should have and be a part of packing a Go Bag – that is, a collection of items in one location (usually a backpack or a small suitcase on wheels) that is easy to carry in the event of an emergency when rapidly evacuating a home. Go Bags should contain the following important items: copies of important documents such as birth certificates, photo identification, copies of credit/debit cards, cash in small bills, water, flashlights, batteries, toiletries, and a first aid kit. Each member of the family should have their own Go Bag personalized to their distinct needs. When packing a child's Go Bag, some additional items to include are:

- Parent information and cellphone numbers in case they are separated from their children;
- Any childcare supplies needed (such as diapers, wipes, cups, etc.); and
- Games and small toys to keep children occupied, such as coloring books and puzzles.

To date, NYC Emergency Management staff have visited 820 schools, conducted 1,500 workshops and assemblies, and trained more than 200,000 students. It is important to teach children about what to do in case of an emergency. Preparing items, writing down phone numbers, and practicing a plan can make the difference in keeping communities safe this hurricane season and in the years to come.

As part of preparing kids for the next emergency, New York City Emergency Management distributes Ready New York Guides, designed specifically for kids, to schools and organizations. The guides offer an interactive and fun-filled way to get kids involved in creating their own emergency plan. These guides are available – for parents and teachers – in English, Spanish, Chinese, and Russian, as well as in audio format. To learn more about the Ready NY Kids Program, visit [Ready NY](#).

Katelyn James is a program specialist in the Community Engagement Unit for the New York City Emergency Management Department. Since 2014, her program has trained over 200,000 students across New York City and has visited hundreds of schools and community organizations. In 2015, she launched Ready Girl, the emergency preparedness superhero that has created a new platform for teaching kids safety and preparedness and launched a comic book with Marvel Custom Solutions. She has appeared on Good Day New York, ABC 7, CBS, Fox 5, and New York 1 representing NYC Emergency Management on different emergency related issues. In April 2017, she received the Outstanding Achievement Award in Public Awareness from the National Hurricane Conference in New Orleans for the creation of Ready Girl. To learn more about Ready New York, visit nyc.gov/readyny or visit <http://www.readygirlnyc.wordpress.com> to follow Ready Girl's adventure.

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