



# DomPrep Journal

Subscribe Volume 10 Issue 12, December 2014

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DomPrep Journal is electronically delivered by the IMR Group Inc., 517 Benfield Road, Suite 303, Severna Park, MD 21146, USA; phone: 410-518-6900; email: subscriber@domprep.com; also available at www.DomPrep.com

Articles are written by professional practitioners in homeland security, domestic preparedness, and related fields. Manuscripts are original work, previously unpublished, and not simultaneously submitted to another publisher. Text is the opinion of the author; publisher holds no liability for their use or interpretation.



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*About the Cover: DomPrep’s readers are full of “Big Ideas.” When asked to share them, DomPrep received many that are highlighted in a special “Brainstorm” section of this issue of the DomPrep Journal. Of course, big ideas are not confined to December, so please continue to share your thoughts and suggestions throughout 2015 and beyond.*



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## Editorial Remarks

*By Catherine Feinman*



**B**ecause December is the time of the year for reflection and planning, DomPrep asked its subject matter experts – both writers and readers – to share their thoughts on where preparedness efforts are going in 2015 and beyond. Many readers shared their “Big Ideas.” Those ideas happen to fall in 25 different categories. Additionally, several writers offered their thoughts in greater detail making this issue of the journal the most participated in to date, with over 60 contributors.

James Coldren Jr. and Denise Rodriguez King lead this issue of the *DomPrep Journal* with the hot topic of body-worn cameras. Although not a “new” technology, the use of such devices has been thrust into the national spotlight as the White House proposes equipping all police officers with them. However, before implementing such programs, agencies first must examine related benefits and challenges, and evaluate and review the effectiveness of these cameras as law enforcement tools.

When used properly, body-worn cameras would serve as legal proof when there are contradicting witness reports. However, Samuel Johnson proposes that, with or without cameras, the “us versus them” mentality must change between citizens and law enforcement officers by redefining the social construction within communities.

Other articles in this issue also address the need to bring communities together using a whole-community approach. Anthony Mangeri explains how public health threats are not simply public health concerns. Emergency managers must assess emerging infectious disease threats and prepare to manage a multiagency response to these slow onset disasters. Lunetta Sims shares how Texas is leveraging youth volunteers and strengthening community preparedness and response for many years to come through a robust Junior Medical Reserve Corps program.

In addition, some future capabilities can be reached with little or no changes in budgets – and may even save money in the long term. Craig Crume offers a few practical steps to help agencies build capability, confidence, and readiness by developing concepts of operations, reviewing equipment needs, training personnel, maintaining instruments, and regularly practicing skills. Joseph Cahill describes how community paramedics may soon fill the gap between routine doctor visits and emergency transport to hospitals, giving communities the opportunity to better serve their populations’ urgent-care needs.

When gaps in current technologies exist, manufacturers will find ways to fill these gaps. Chris Petty identifies one such emerging technology as mass spectrometry tools that will be smaller, easier to use, and more accurate for trace-level detection and identification. Whether current or new technologies and techniques are used, the most important preparedness goal is resilience.

Concerned about communication resilience, Christina Crue points out how a decision from the Federal Communications Commission soon may affect responders’ ability to identify 911 callers, to track suspects, and to transition, test, and validate telephone databases following a disaster. Much of the nation and the world are dependent on electric power infrastructure. Stephen Grainer rounds out the issue by sharing lessons from Hurricane Sandy for future management of ground support, supplies, and facilities the next time when electric power fails.

# Body-Worn Cameras: The Path Forward

By James Coldren Jr. & Denise Rodriguez King



On 2 December 2014, the White House announced a proposed investment package to purchase body-worn cameras for police departments across the country ([“It’s Not Just a Ferguson Problem, It’s an American Problem” – Improving Community Policing](#)). The announcement has generated much interest among law enforcement agencies, the communities served by these agencies, and organizations and associations that support and represent these affected groups. The White House proposal suggests that broad implementation of body-worn cameras is likely to “build and sustain trust between communities and those who serve and protect these communities.”

## ***New Technology – Benefits & Challenges***

However, there needs to be more research evidence regarding body-worn cameras. Studies in Rialto, California, and Phoenix, Arizona, suggest that, although there are anticipated benefits, there also are challenges. The benefits that this technology offers law enforcement agencies include reductions in citizen complaints and police use of force, increases in officer safety, and likely reductions in lawsuits and out-of-court settlements, but cameras are only part of the solution.

Technology, when implemented with insufficient planning and foresight, can create more problems than it solves. It can be very costly unless the following issues are addressed: provision of quality training; sound management; clearly articulated policy; consideration of other information (e.g., police reports, eyewitness accounts) in resolving complaints and use of force incidents; understanding the limitations of the technology; citizen input regarding policies and practices; and sound policies regarding release of video files from the body-worn cameras.

In addition, the technology itself is fraught with challenges because its use is new in the law enforcement field: implementation costs; infrastructure and information management costs; and variations in equipment modalities. As such, the cost-benefit of this technology is unclear. Although cities may realize cost savings from reduced complaints and lawsuits, if they have to bear the predictably high costs of responding to public information requests for the cameras’ video files, those costs may trump the savings realized. The rapid pace of technological development behind these body-worn cameras can be hard to keep up with and the learning curve on its use can be steep, making the quick implementation of this new technology difficult and perhaps costly.

## ***Implementing an Effective Program***

Agencies seeking federal funding to purchase body-worn cameras or in the process of implementing them should proceed with caution and consider the following:

- Develop peer-to-peer relationships with agencies currently using body-worn cameras and seek advice and assistance with planning, policy development, and implementation;
- Begin the body-worn camera process with a pilot program – before distributing cameras throughout the agency – to enable the department to reassess equipment, technology infrastructure, policy, and training;
- Study and evaluate the impact of the cameras by examining citizen complaints, internal investigations, litigations, community relationships, and more; and
- Include line officers and community members in the planning process because buy-in among both of these groups, as well as mid-level supervisors and agency leadership, is important to ensure the acceptance, proper implementation, and sustainment of the technology.



Most of the challenges are surmountable and, although agencies should proceed with caution, it is likely that a number of benefits will come from the use of body-worn cameras. In addition to funding the implementation of body-worn cameras nationwide, the federal government should ensure that technical assistance and training is readily available to local law enforcement agencies as they proceed with camera implementation. This has proven to be a sound approach in other federally sponsored large-scale system reform efforts, such as the Department of Justice Office of Community Oriented Policing Services Collaborative Reform Initiative for Technical Assistance Program.

A comprehensive understanding about what the cameras provide, what problems they solve, as well as their limitations and access to expert technical assistance will enable law enforcement agencies and the federal government to better evaluate and review their effectiveness as a tool in increasing transparency, building and sustaining community trust, and protecting citizens and officers from harm.

---

*Dr. James Coldren Jr. (pictured above) is the managing director for Criminal Justice Research Programs at CNA Corporation. He is the project director for Technical Assistance and Training for the Bureau of Justice Assistance (BJA)-supported national Smart Policing Initiative and a project director for BJA's Violence Reduction Network. He is the principal investigator for two National Institute of Justice-funded research projects – one concerning correctional equipment modalities and their impact on officer safety, and the other involving a randomized experiment with body-worn cameras in the Las Vegas Metropolitan Police Department.*

*Denise Rodriguez King is a research analyst in CNA Corporation's Safety and Security division. While at CNA Corporation, she has: managed a number of projects; conducted assessments of police policy, practices, and procedures; reconstructed police critical incidents and large-scale events; drafted use-of-force policies; and developed law enforcement-specific assessment reports for a number of local level law enforcement agencies – including Tampa Police Department, Baltimore Police Department, Las Vegas Metropolitan Police Department, and Spokane Police Department.*

# The Future of Handheld Chemical Detection & Identification

*By Chris Petty*



**T**here is an increasing need for chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) detection tools that can transition with the evolving array of modern threats society faces. This need has resulted in the development of new technologies that effectively detect and identify a wide variety of explosive and chemical threats. Such technologies can be used at the point of need by first responders, civil support teams, and military units.

Priorities for the deployment of fieldable technologies are influenced both by risks anticipated during military deployment and by incident responses to domestic chemical attack such as Tokyo's 1995 sarin incident, or bombings like London's 2005 subway attack and the more recent 2013 Boston Marathon incident.

Extremist groups continue to develop explosive and chemical emission devices that are increasingly difficult to detect by employing techniques to disguise the technology, or designing and engineering to emit only trace amounts of vapor, making them difficult to detect using existing technology. These developments call attention to the imminent need to equip first responders with modern advanced analytical capabilities that provide actionable answers in the field.

## ***Demand for New Technologies***

Hazardous material and CBRNE communities recognize that presently deployed technologies for threat detection and identification struggle to keep pace with the increasing range of chemical threats that can be employed. This is particularly true in chemical defense where a host of industrial compounds and new weapons-grade materials are expanding concerns beyond traditional chemical warfare agents. Additionally, homemade explosive devices are now often fabricated from a range of commonly available materials, expanding threat lists beyond traditional explosives.

In an environment of tightening government budgets, equipping first responders with the correct tools for chemical and explosive threats remains a priority. As an example, progress on the U.S. government's Next Generation Chemical Detector ([NGCD](#)) program, demonstrates significant investment in the development of new technology. Existing technology is no longer sufficient for the complex array of new chemical threats, but the NGCD program is specifically designed to develop and procure devices for chemical warfare agents, toxic industrial chemicals, and beyond.

## ***Existing Trends in Detection***

Widely deployed technologies traditionally used to detect or identify these threats – such as ion mobility spectrometry, Raman, and Fourier transform infrared spectroscopy (FTIR) – fulfill their purposes, but no single technique or approach can handle the wide



array of challenges faced today. Although the responder toolkit is robust, gaps remain for downrange chemical identification.

Within the past decade, the introduction of robust, handheld Raman, and FTIR spectrometers have filled significant capability gaps. These technologies created a paradigm shift in the first responders' approach, arming teams with sophisticated analytical capabilities directly in the hot zone. The remarkable chemical selectivity of these tools enables the identification of a wide range of chemicals – both actual threats and benign materials that will typically be present at a scene. These disruptive developments dramatically increase the ability to identify chemicals in a variety of harsh environments and increase situational awareness. Although these devices significantly redefined capabilities of the first responder, the primary limitation is that these devices are not very sensitive, so relatively large amounts of the material in question are required to obtain a result. Raman and FTIR rarely can be used for trace-level detection and identification.

*“Innovative new mass spectrometry devices are expected to fill current capability gaps, expand the responder toolkit, and provide specific chemical analysis down to trace levels in a matter of seconds rather than hours.”*

Older technologies using ion mobility spectrometry (IMS) are sensitive and, therefore, suitable for trace detection. However, they lack the selectivity required to effectively differentiate compounds, thus limiting detection with IMS units to a very small list of target compounds. Arguably worse for deployment, a wide array of interferents – including diesel fumes, cleaning supplies, and colognes – trigger frequent false alarms on IMS devices and undermine confidence in their use.

Until recently, one technology that has not been available in a handheld form factor is mass spectrometry. Commonly referred to as the “gold-standard” technique for analytical testing, mass spectrometry has been confined to laboratories by its large size, expense, fragility, and complexity. Conventional mass spectrometry systems typically are operated and maintained by highly trained experts. The development of “luggable,” or person portable, mass spectrometry systems is a step forward in bringing this powerful capability to the field. However, present systems remain relatively fragile, expensive, and complex to use.

### ***The Future of Trace Detection***

At the scene of a CBRNE incident, first responders must be equipped with tools to help them detect and identify an array of chemicals, and often at trace levels. In order to establish the most appropriate course of action, they need to be able to quickly and accurately assess the situation, which means they must have reliable answers as soon as possible. Innovative new mass spectrometry devices are expected to fill current

capability gaps, expand the responder toolkit, and provide specific chemical analysis down to trace levels in a matter of seconds rather than hours.

Devices with little susceptibility to false alarms will offer responders more confidence in their subsequent course of action. Mass spectrometry is powerful and selective enough to detect trace-level target compounds when other chemicals, or interferents, are present in the background – a common occurrence in real-world situations.

It is crucial that the next generation of technology keep up with the expanding and evolving list of chemicals that could be used in a CBRNE attack. Achieving this will require a leap in technology so that first responders, civil support teams, and the military have the equipment needed to effectively detect and identify threats, take action, and protect their communities as well as themselves. New breakthroughs for CBRNE detection will come from mass spectrometry in a miniaturized and rugged format. These tools will provide new capability, meeting the need for trace-to-bulk detection with the speed, power, and fidelity required for the response missions of today.

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*Dr. Chris Petty is co-founder and vice president of business development at Boston, Massachusetts, based [908 Devices](#). He is an executive with over 21 years of experience in the analytical instrumentation industry. He has been responsible for development of new markets and market expansions introducing product platforms in numerous high growth acquired businesses at Thermo Fisher Scientific. He has more than 25-refereed papers and conference presentations, has won R&D 100 and Frost & Sullivan awards for his products, and an American Marketing Association award for interactive promotional campaigns. He received a Ph.D. in Chemistry and B.Sc. in Physics from Southampton University in the United Kingdom with industrial sponsorship from PerkinElmer.*

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# Emerging Infectious Diseases – A Whole-Community Approach

By Anthony S. Mangeri



**T**he World Health Organization defines an emerging infectious disease as either a new disease that has not been previously identified or a disease that is known but increasing in frequency. Like many natural disasters, emerging infectious diseases such as Ebola virus disease (EVD) and severe acute respiratory syndrome (SARS), as well as the reemergence of tuberculosis and other diseases, require an integrated whole-community response.

## *Planning, Resources & Response*

Managing threats from emerging infectious diseases requires planning, as well as public and private sector resources. All facets of local government, including public safety and the community as a whole, must be part of the response. For this reason, emergency planners and mitigation officers need to consider emerging infectious diseases as part of their Threat and Hazard Identification and Risk Assessment ([THIRA](#)) process.

Similar to other natural hazards, EVD is just one of many emerging infectious diseases that can potentially threaten community normalcy by disrupting day-to-day activities and business operations. This can have significant social and economic impacts. However, implementing an effective community response that is unique to each type of disease would be time consuming and expensive. Operational planners consider the three key components of personnel, time, and cost when preparing emergency operations plans. If there were little time to respond, then cost and personnel would have to increase to meet demand. If availability of response personnel were low, the response would clearly take more time and require more financial support.

***Emerging infectious diseases are more than simply public health emergencies. They can be disasters affecting entire communities and the threat needs to be treated as such.***

According to the Centers for Disease Control and Prevention ([CDC](#)) website, during a 30-year period (1976-2006), CDC estimated that flu-associated deaths in the United States ranged from 3,000 to 49,000 people. Moreover, in the fall of 2014, CDC began an [investigation of acute flaccid myelitis](#) – inflammation of nerve cells in the spinal cord, which can be caused by viral infections – in U.S. children. Thus far, CDC has identified 94 children in 33 states with this illness.

In reality, an emerging highly infectious disease incident: (a) can easily overwhelm a community's emergency response and medical systems; and (b) requires a comprehensive multiagency response for all communities possibly affected by the disease.

### ***Slow Onset Disasters***

Many agencies consider communicable illnesses – including EVD, SARS, and influenza – public health incidents, rather than slow onset disasters requiring activation of emergency management systems. This leads some communities to assume that public health can address such crises without outside assistance. Community mitigation strategies for widespread pandemic incidents may include social distancing and isolation of those who may be ill. Such strategies require activation of jurisdictions' emergency operations plans to manage isolation protocols, cancel public gatherings and events, establish points of dispensing, monitor patients, and transport patients.

For these reasons among others, it is time to integrate communicable and infectious diseases into communities' THIRA processes as emerging natural hazards. The Federal Emergency Management Agency (FEMA) has published the second edition of the [THIRA Guide](#) in 2013. This guide provides a strategy for completing a comprehensive communitywide THIRA using a standard four-step process. At its core is the FEMA whole-community approach.



This approach defines emergency preparedness as an integrated risk that requires each community to estimate capability requirements of the whole community including residents, businesses, faith-based organizations, nonprofit groups, schools and academia, and all levels of government. The THIRA process is designed to aid communities in identifying threats they may face and tasks they must do to prepare. In addition, communities work together to identify the resources needed and determine actions that can mitigate hazards, which should include public health threats from emerging infectious diseases.

Emergency management is a system – a process designed to bring stability to a crisis and manage the impact on a community. The role of emergency managers is to ensure that all partners in the community can effectively respond to, recover from, and mitigate the potential effects of known hazards and their threat assessments should include risks of emerging infectious disease.

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*Anthony S. Mangeri, MPA, CPM, CEM, is the director of strategic relations for fire services and emergency management and is on the faculty of the American Public University System's School of Security and Global Studies. He has more than 30 years of experience in emergency management and public safety. He also has spent much of his career integrating public health and community emergency management systems. During the terrorist attacks of 11 September 2001, he served as operations chief at the New Jersey Emergency Operations Center, coordinating that state's response to the passenger-aircraft crashes into the World Trade Center.*





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# Texas – Youth Volunteers in the Medical Reserve Corps

*By Lunetta Sims*



**H**arris County Gateway to Care Medical Reserve Corps ([MRC](#)), in collaboration with the Harris County Citizen Corps, Houston, Texas, is one of 993 MRC units in the United States. After President George W. Bush challenged all Americans to volunteer in support of their communities in his 2002 State of the Union address, the MRC was founded as a national network of medical and nonmedical volunteers. Organized locally, MRC units help to improve the health and safety of their communities.

## *Integrating a Younger Generation*

Youth members in the Junior MRC can participate through their Health Occupations Students of America ([HOSA](#)) activities. HOSA, a national student organization recognized by the U.S. Department of Education and the Health Science Education ([HSE](#)) Division of the Association for Career and Technical Education ([ACTE](#)), has a twofold mission: (a) to promote career opportunities in the healthcare industry; and (b) to enhance the delivery of quality healthcare to all people.





The MRC provides partnership opportunities that allow HOSA members to take an active role in contributing to their schools and communities in public health and emergency preparedness. This partnership reinforces the value of HOSA chapters and member involvement in emergency preparedness and addresses the priority issues of the Office of the United States Surgeon General. In fact, youth members are certified in first aid, cardiopulmonary resuscitation, and automated external defibrillators at the same education level as adults.

In 2014, Junior MRC youth in Harris County participated in several events where first aid stations were provided, including: the Santa Maria Bonita Street House of Hope Run for Recovery; Walk4Hearing; and Mothers Against Drunk Driving (MADD) Walks. At the Run for Recovery event, upon hearing that the venue had a water shortage, some Junior MRC team members began making mini-icepacks for runners by placing ice in rubber gloves and passing them out at the finish line. Other Junior MRC team members were placed at the mid- and turnaround points with adult team members to spot potential injuries.

At one local school, its Junior MRC team members created an emergency preparedness presentation for 250 teachers at their school and gave each teacher a [Ready bag](#) of preparedness goodies to take home. Another school's Junior MRC team has gone into the local YWCA to teach healthy eating and exercise awareness to elementary school kids.

All Junior MRC team members have participated in local hospital MD Anderson Cancer Center's [ASPIRE](#) (A Smoking Prevention Interactive Experience) campaign, an interactive computerized exercise geared toward high school students. Students receive a certificate of completion and a \$25 gift certificate for their participation.

### ***Questions & Answers About Youth Involvement***

Why work with volunteers under age 18?

- Working with youth whose career paths are in the healthcare field benefits the local MRC unit; and
- Working with youth members strengthens the community as a whole.

What can youth do in an MRC?

- Work a phone bank;
- Assist with administrative assistance;
- Provide logistics support;
- Assist at first aid stations;
- Provide instruction and resources for health education programs targeting youth and underserved populations;
- Assist with immunization clinics;
- Assist at local blood drives; and
- Shadow professional volunteers.

What about the maturity and safety of youth volunteers?

- Volunteers know each other;
- Youth are always supervised;
- Leaders should use discernment when deciding in which activities to involve youth;
- MRC units should always have parental consent and/or involvement; and
- As with adult volunteers, behavioral health professionals should be available if needed.



In 2013, the Klein Oak High School Junior MRC took first place in the area and state competitions, advancing to the national HOSA competition. In their first year of the partnership, they placed fifth at nationals out of ten high schools for their MRC partnership activities. The benefits of this partnership can be summed up in the words of former Junior MRC team member Ekta Patel, who graduated high school in 2013:

*Mrs. Sims,*

*Thank you so much for the shout out! My team at Klein Oak would never have been able to accomplish so much without your help!*

*Participating in MRC and attending the numerous events has led me to choose the major of public health at UT [University of Texas] Austin. I would like to still continue working with the MRC in Austin. Is there a branch or volunteer coordinator that I could get in touch with?*

*Once again, thank you for helping my team succeed and unknowingly help me choose my future in public health.*

*Ekta Patel*

---

*Lunetta Sims, Harris County Gateway to Care Medical Reserve Corps (MRC) coordinator, has worked for Gateway to Care, Houston, Texas, since 2010. She manages some 770 volunteers. The youth volunteers include Junior MRC teams at Michael DeBakey High School for Health Professions, Klein High School, and Klein Oaks High School. She may be contacted by email: [lsims@gatewaytocare.org](mailto:lsims@gatewaytocare.org).*



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# Brainstorm

## 25 Concepts From Subject Matter Experts

When planning for its annual forecast issue, DomPrep reached out to subject matter experts in all preparedness disciplines to share which solutions they believe have significant potential to improve preparedness (readiness and resilience) over the next five years. In 200 words or less, more than 50 readers answered the call.

As some noted, there is no single big thing. The next big thing is, “multiple technologies: social media; drone/UAV; smart clothing/wearables, all things communications. We are just scratching the surface of technology use in emergency management and our related disciplines,” replied Eric Holdeman, director of the Center for Regional Disaster Resilience.

From current solutions that will become more prevalent in the future to solutions that are still in the making, the following 25 categories offer innovative ideas in technology, process, and human behavior that will create more prepared and more resilient communities.

### 1 3-D Printing

“3-D printing is becoming more common. It could reasonably enable a quicker disaster response and recovery by producing onsite and eliminating the need for much of the costly logistical provision of building materials, sheltering components, even food and medical supplies.”

**Charles Perino,**  
*Emergency*



### 2 Communications

“Restricted cell phone frequencies, or the ability to lock out consumer cell traffic, to ensure emergency services have full communications capabilities during an emergency.” **Anonymous**

“More interactive communications via the Internet. Social media is in the forefront now, but old-fashioned e-mail and interactive TV may be excellent means of communicating with individuals and families as the newer technologies mature.” **Mark D. Kaintz,**  
*MA, PCP, Co-Chairman,*  
*Board of Directors,*  
*PandemicPrep.Org*

### 3 Smartphone Apps

“Smartphone-enabled instrumentation and new apps.”  
**David Brown, President, Berkeley Nucleonics**

“Automated communications (alerts) that involve multiple jurisdictions and multiple levels (CEO through neighboring businesses and residents). The alerts will be based on incident type and proximity. They will target people who signed up as well as cellphones in the vicinity. They will reveal multiple levels of information based on recipient.”  
**Charles A. Bishop, Emergency Management, J. Sargeant Reynolds, Community College, Richmond, Virginia**

# 4

## Information Sharing

“DHS and the Information Sharing Executive Office’s Homeland Security Information Network (HSIN). This FOUO/SBU-level platform is in its third iteration, and it is connecting the dots among the entire enterprise – from emergency management to fusion centers, special events to steady-state operations. The HSIN platform is customizable, secure, and free. Recent improvements, such as the free use of Adobe Connect for any of HSIN’s 25,000 users and access using a DHS-issued PIV card make the system even more attractive and easy to use. HSIN is in short, the silo-buster for improving overall national awareness, preparedness, and readiness.” **Anonymous**



# 5

## Social Media

“The immediate nature of this communication has changed the way government has to react and communicate with the public. Ferguson riots are a stark reminder that the public is not waiting to be spoon fed information, they have it at their fingertips. If no information is shared, they will make up the story and decide the solution to the problem, real or perceived.” **Chief Pat Walsh, Lompoc Police Department, Lompoc, California**



“Social media will be the catalyst to direct the public to get informed and what tools there are out there to assist them.”

**William D. Perkins III, Capitol Region Council of Governments, Homeland Security Training & Project Coordinator, Emergency Management Duty Officer, CT-IMT3 Operations Section Chief**

# 6

## Data Collection/ Analysis

“Stratified Informatics.” **Dr. Amaal Tokars, Executive Director, Kendall County Health Department**

“Technologies that allow for the collection and analysis of data will continue to improve homeland security prevention, preparedness, and response activities. Emerging technology won’t be an issue going forward, however, governments’ willingness and the legal parameters to share data will slow the process.” **Christian Schulz, Lieutenant Colonel, Homeland Security Branch, New Jersey State Police**

# 7

## Geographic Information System/Global Positioning System

“The use of automated, disaster-specific apps such as GPS tracking, ‘I am (not) OK’ messaging with GPS data, casualty identification, and status tracking, etc.” **Prof. Pinchas (Pinny) Halpern, MD, Chair of Emergency Medicine, Tel Aviv Medical Center, Associate Professor of Emergency Medicine, Tel Aviv University, Israel**

“What3words.com. This will revolutionize the way we refer to latitude/longitude.” **Kevin Brenker, Executive Vice President, Vigilant Systems Group LLC, Newport, New Hampshire**

“One next big thing will be locators, passive and active, to enhance SAR [search and rescue] and Urban SAR capabilities, tracking of downed officers and firemen, and high-risk civilians such as students, the cognitively impaired, and the handicapped in disaster or terrorist situations.” **Anonymous**



# 8

## Cloud Computing

“Cloud storage will be available no matter where we relocate. However, availability will only happen if the cloud provider is prepared and has multiple redundant storage facilities. Security is an issue with the cloud and must be verified before use.” **Anonymous**

“Cloud computing and mobility platform combined with improved data speeds and reduced cost. This will enable planners and field operations to meld. Presently the planning function is not fully integrated into operations and logistics. The meld of these functions will provide instant analytics and ability to modify plans under incident conditions. Logistics support can become proactive as operational plans are modified.” **Micheal Whelan, Executive Vice President, Salamander Technologies**



“Being prepared for the process of reunification is important for a complete disaster preparedness program. StatusNet911, a cloud-based application that connects hospital emergency departments with emergency medical services dispatch systems providing hospital-specific 911 incident and inbound unit information as well as coordination during multicasualty incidents. The preparedness extension for reunification allows seekers to find their injured family members through a single call into the EMS or hospital system. The seeker is called once the sought individual is located.” **Swati D. Allen, Managing Partner, DataTech911**

# 9

## Integrated Technologies

“Next Generation 911 is the next ‘big thing.’ This is where video, text/SMS, MMS, and voice all come together. Integrating this technology along with a concept of operation of its usage will shape public safety for years to come. As each PSAP refreshes its technology, this issue requires much focus. Will we allow what are now separate vendors to propose proprietary solutions? Or, will we require integrated solutions that provide a useful common operating picture for all public safety and aligned agencies? That will play out over the next 5-10 years.” **Anonymous**

# 10

## Drones/Unmanned Aerial Vehicles

“Drones for situational awareness should be explored by emergency managers...”

They can be used for many situations (damage assessment, wildfire, etc.).” **Marc Barbieri, Emergency Management Coordinator, Fairfax County Health Department**

“Public agency use of drones.” **Captain Michael Barvels, FDNY**

“Remotely controlled vehicles (commonly called robots or drones). Machines that can roll, walk, or fly into and through hazardous environments to gather information or solve problems, might change the title of humans from first responder to second responder. Imagine a nuclear plant disaster where robots are sent in to do damage assessment with radiation sensors to map leaks. How soon before it is standard procedure for firemen to fight a fire from inside the fire truck, remotely operating small vehicles that enter the building to fight the fire and search for victims? The only thing that surprises me is how slowly this emerging technology is taking off.” **Anonymous**





# 11

## Alternative Energy

“Cheaper, more efficient, alternative energy producers – better photovoltaic cells for solar power, wind turbines, etc.” **Anonymous**

“Direct current microgrids. Given that we know how to deep energy retrofit existing buildings, the main remaining load category is ‘plug load.’ Increasingly, as appliances/ computers/TVs/gadgets infused with electronics comprise that load, DC becomes paramount. Add PV, whose output is DC, and an all-DC house is a no brainer. Add DHS’s Fortified Star to the mix and link a cluster of like structures with an ‘islandable’ DC microgrid and we have a base for a resilient redesign of the grid.” **Terry Hill, Senior Policy Advisor, PHIUS**

# 12

## Infrastructure Protection

“Protective devices

added to the electrical grid to guard against CME or EMP and the loss of the grid.” **Anonymous**

“Active health monitoring in the electrical grid. Sensors and algorithms that detect faults in the grid prior to event.” **Kevin Brenker, Executive Vice President, Vigilant Systems Group LLC, Newport, New Hampshire**

# 13

## Alternative Food Supplies

“Ancient grains such as finger millet will emerge to provide food in drought-ridden parts

of the world. These grains are extremely resilient to the drought environment. They do not need to be reseeded and will sprout when the slightest precipitation occurs.”

**Scott Jackson, Burnham Systems Consulting, Greater Los Angeles Area**



# 14

## New Oxygen-Absorbing Compounds

These [compounds](#) can be used to bind, store, transport, and release oxygen where needed. Uses may include enhancing food-preserving time and regulating oxygen supplies for lung patients and fuel cells in cars. *Shared by Dr. Lawrence Roberge*

# 15

## Chemical/Biological/Nuclear

“GoPro and related visual links; technologies in detecting chemical and biologic agents; use of surveillance systems in sites like emergency departments to detect and manage disease outbreaks, natural or man-made; and clarification of roles in disease outbreaks.” **Anonymous**

“If considering the ‘next big thing’ for issues, I think it will be nuclear power/preparedness/response and maybe nuclear attacks.” **Anonymous**

# 16 Medical Treatment

"I believe that aerosolizing of life-saving medications such as Narcan has significant potential to improve preparedness over the next five years. Aerosolized medications can treat truly life-threatening emergencies and are not invasive in nature. Coupled with national approval for multi-level first responder use (e.g., paramedics, EMTs, law enforcement officers, and firefighters) this solution can revolutionize community readiness and resilience, and reduce overall loss of life for all levels of incidents and events – natural and manmade." **Vivienne Treharne, B.S.N., R.N., Registered Nurse Consultant, Florida Department of Health, Bureau of Preparedness and Response, Logistics Unit**

"Hemostatic agents and tourniquets developed for the military AND finding a way to get them into active-shooter scenarios and explosive-device incidents immediately when multiple casualties exist. Staging EMS resources while the threat is confined and eliminated results in more victims bleeding out and not surviving. EMS and/or trained law enforcement officers need to take these adjuncts in with them and use them while other law enforcement assets are providing cover and protection. Every police officer, firefighter, and EMS provider need to have QuikClot/Combat Gauze and a tourniquet deployable with one hand. Every U.S. Marine carries it and is trained to use it; surely we can do the same with our first responders." **Ben Chlapek, Public Safety Training Coordinator, Mid-America Regional Council**



# 17 Telemedicine

"Telemedicine can allow both rural and remote access to specialized care. The problem with

this, however, is how to ensure a robust and redundant system during an event that compromises the technology."

**James Johnson, RN, MICN, Paramedic Liaison Nurse, Chino Valley Medical Center**

# 18 Biometrics

"Mobile fingerprint scanners and other forms of biometric

identification. With the rising threat of terrorism and terrorists utilizing false passports and ID fraud, patrol officers and immigration and border patrol agents need a more reliable way of identifying people." **Matt Ernst, Deputy Sheriff**

# 19 Training the Public

"Greater involvement within the citizen population is the biggest driving force for effective national preparedness. This includes not only the basic preparedness

features pushed by FEMA and DHS on their websites, but a significant increase in Community Emergency Response Teams (CERT) participation and a fundamental

change in what technical information is released to the public. Training in CBRNE awareness and individual requirements in an incident should be proposed for wide distribution and easy access to the public.

A trained public will

benefit, as less time is then required to cover basics, explain standard actions, and reassure the masses in the early stages of an incident. The public would also be better prepared to assist through accurate and detailed information sharing." **Sudhir Oberoi, Health Physicist, State of Oregon**



# 20

## Security

“Site-wide video security. Unlike surveillance, which is primarily used for

forensic purposes, to identify intruders after the fact, video security actively alerts site security teams to intrusions, tracks intruders, shows them on-screen, and geolocates them for fast response. Recent technical developments promise to make wireless video security systems easier to install, more economical to operate, and more ready for integration into a larger security system.”

**Anonymous**



# 21

## Public Relations

“Not a technology and not new at all, police community relations are fundamental to homeland security. Slogans

such as ‘If You See Something, Say Something’ have meaning only if those who see something are willing to say something to the police. The recent protests over the Ferguson Grand Jury demonstrate that a significant portion of the population mistrusts the police and are reluctant to get involved with them – there is a ‘synaptic disconnect’ between those with potential homeland security information and those that can do something about it. The police/homeland security needs the civilian population. There are more than 800,000 full-time sworn law enforcement officers in the United States, and more than 318 million people. Law enforcement/homeland security needs those 318 million additional observers. To do that, we must dramatically increase police-community rapport.” **Martin J. Alperen, consultant, CHDS alumni**

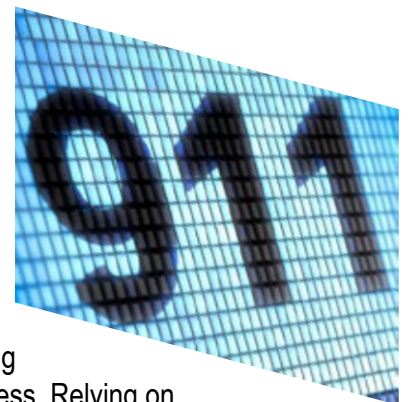
# 22

## Situational Awareness

“True situational awareness is critical. We’re still stuck in information hoarding and secrecy. Publicly available daily briefs, fusion center briefs, law enforcement briefs are critical at every

level of preparedness. Mostly this will need to be electronic media, but utilizing keyword scanning to pull agency-relevant information.” **Robert A. Mitchell, CFO, CEMSO, FPEM, ILO, Assistant Fire Chief, Deputy Emergency Manager, Reedy Creek Emergency Services**

“Continued utilization and integration, by federal, state, and local homeland security and emergency management agencies, of social media monitoring and communicating technologies in an effort to improve major emergency and disaster situational awareness. Relying on information from callers utilizing a 911 emergency number system is not the fastest way to receive information from the public anymore. More members of the public are turning to social media to instantly ‘broadcast’ near-real time descriptions and imagery from emergency locations. Harnessing this data effectively will assist agencies in assessing impacts and gaining greater situational awareness in shorter periods of time.” **Michael Lee, Emergency Manager**





# 23

## Volunteers

“Utilization of specific professionals in disaster-appropriate resourcing, better planning, and coordination of resources including volunteers coordination of behavioral health resources for both survivors and responders.” **Brenda Pittman, EMS & CISM Coordinator, Lancaster County, Pennsylvania**



# 24

## Whole Community

“Movement from regulatory and security-centered solutions toward public safety and justice-based solutions. Integration of ‘whole of community,’ ‘community policing,’ the 87% of fire departments that are volunteer or mostly volunteer, evidence-based/community-oriented public health, and philosophically similar strategies into national (federal/tribal/state/local/private) homeland security and homeland security efforts. Away from regulatory control national security based homeland security toward a community justice, public safety oriented, whole of community homeland security that provides security because of the community rather than on the community. Because homeland security must move from what works for national security to what works domestically if they want to protect the homeland.” **Charles Eanoff,**

**Alumni & Subject Matter Expert, Naval Postgraduate School Center for Homeland Defense and Security**

# 25

## Gun-Shot Detection

“For active shooters, indoor gunshot detection and victim-initiated mitigation systems become as routine as fire alarms (Ok... maybe 10 year horizon). Just like the fire hazard, delays in recognition of shootings by bystanders results in lost

time for both implementation of self-protection behavior and notification of first responders. These delays can result in the loss of life, if we can have reliable gunshot detection systems for buildings like are relied on outdoors in high-crime areas, it has potential to save lives. If these can become part of building codes and required in renovations of public venues, they can help mitigate what is described in latest reports as a growing problem (Blair & Schweit, 2014).” **Sgt. Mark Landahl, CEM, Frederick County Sheriff’s Office, & PhD Student, Oklahoma State University (researching active-shooter events)**





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# Future Response Capabilities: Five Points to Consider

*By Craig Crume*



**A**lthough the latest threat-response technology or pocket-sized wonder device is always welcome, the next big advance for emergency responders could be as simple as evaluating and updating existing capabilities and procedures. The readiness of chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) response equipment and operators varies widely – from exemplary, well-organized, well-executed equipment sustainment plans, to storage rooms containing large quantities of unused equipment, the majority of which is not operational. The time has come for the emergency responder community to take practical steps to improve the readiness and capabilities of equipment they already have.

Many first responders' CBRNE equipment sets are collections of new, old, and “we don't really know where this came from” equipment. For many years, equipment was purchased using seemingly free-flowing grant money based on a response to a specific terror threat at the time. Occasionally, purchases were based merely on the

*“The right combination of ConOps, equipment sets, training, and upkeep provide the framework of a solid, sustainable CBRNE program. Practice is what pulls it all together.”*

popularity of a particular instrument. The end result is that an unacceptably high percentage of the CBRNE equipment fleet is now unusable because: (a) the equipment is broken, obsolete, in need of calibration, out of certification, functional but

untested, or in need of upgrade; or (b) operators have not been trained on the equipment or have forgotten training they received years ago.

Typically, the only equipment that remains in working condition consists of instruments that are deemed critical, are used on a routine basis, or are part of a service contract. It is time to organize in order to: (a) determine what specific capabilities are required based on local threats and scenarios; (b) determine the equipment needed to support these capabilities; and (c) establish the minimum requirements for training, upkeep, and practical exercises to ensure a successful response.

## ***Concept of Operations (ConOps)***

Disaster and threat potentials are not the same in a major urban center as they are in a smaller city in the Midwest, but they both need to have the capabilities to respond. By determining the highest threat and disaster potentials, emergency managers can prioritize the requirements for their CBRNE response capabilities. The U.S. military

establishes ConOps; not surprisingly, different branches and teams have completely different missions and therefore significantly different ConOps. Many state and local responders have ConOps as well, but such plans are likely in need of updating. Emergency managers should focus on a minimum viable capability and review the ConOps plan on a routine basis.

ConOps guide the procedures needed for response and sets expectations. It is important for everyone involved to be on the same page regarding the capabilities of the responder. Although it is not possible to cover every threat, a solid basis will help emergency managers and responders develop protocols to respond to different threats more quickly and efficiently.

### ***Equipment Review – Questions & Ideas***

The following questions sometimes prevent managers and users from reviewing and updating their inventories:

- Based on the ConOps and procedures, what equipment is currently in the inventory that offers the required capability?
- Are the instruments obsolete or in need of an upgrade?
- Do the instruments need only a simple calibration or repair?
- Are the instruments more expensive to repair than to replace?
- Will the manufacturer provide the correct information or just try to sell the newest gadget?

The answers to these questions and more are available, but often require research and working with sales people. The good news is that this is a small community with the common goal of keeping the country safe. Although not everyone may agree on the details, most of the manufacturers' representatives are a wealth of information and can provide solid advice. Here are a few useful ideas to consider when reviewing CBRNE equipment:

- Always use current equipment in the inventory first. For all but the most simple meters, it is less costly to repair and update than to replace the equipment. CBRNE manufacturers generally provide parts and repairs for equipment that other industries would have rendered obsolete more quickly.
- Determine if an upgrade is available. Many of the more sophisticated instruments have a history of upgrades to keep them current. Some users may find maintaining history records annoying, but it is less costly than buying new instruments every few years.
- Determine the obsolescence schedule for an instrument. All manufacturers have a final date they plan to stop supporting an instrument once it is out of production. Upgrade or even repair may not make sense if the instrument only has one year left before it can no longer be fixed.



- Know what equipment is expected to be released in the near future. If the next generation from the current manufacturer or better, faster, and cheaper equipment from a different manufacturer is expected in the next year or so, it probably makes more sense to repair or upgrade the current instrument – and be ready for the next generation down the road – than buy new current-generation equipment.



- Avoid being the first to buy a new type of instrument. The U.S. Department of Defense and larger emergency management organizations have programs to evaluate equipment and determine if it meets the need. Unless a group is willing to do the work to evaluate new equipment, it may be better to observe these leading organizations before spending money on something that could have more hype than substance.

### ***Training & More Training***

A CBRNE instrument is only as effective as the person operating it is. A central issue for the responder community is that many users get little more than a short operator's course when the equipment is first purchased. In fact, many technical support requests come from users whose trainings are out of date or who have not been trained at all. As a result, many perceived equipment failures actually represent a gap in user knowledge. This is particularly true for more-complex instruments.

Recurring training is an invaluable component in a healthy program. Users develop a much deeper understanding of how to get the most from an instrument when they undergo periodic refresher training. Furthermore, advanced and application training not only boost capabilities, but also build confidence and efficiency in preventative maintenance procedures. Web based refresher courses can help sustain responder skills without draining the budget.



### ***Upkeep – Taking Equipment Off the Shelf***

The time to discover that an instrument needs maintenance is not when the alarm sounds. The fundamental purpose of CBRNE equipment is to be able to respond in the event of an emergency.

Most CBRNE equipment cannot simply sit idle on a shelf until needed. Some degree of preventative maintenance is required to ensure the instrument is functioning properly and can be relied on in the field. However, for many responders, using and maintaining CBRNE equipment is not their primary job function. Consequently, preventative maintenance often is performed only when the rest of the job duties are done, which might be irregularly or not at all.

In many cases, instrument malfunctions could be resolved without returning the instruments to a service center or to the manufacturer for repair. When bolstered by expert technical support, users who consistently perform recommended preventative maintenance procedures tend to have fewer malfunctions overall. Achieving this level of efficiency means developing a clear preventative maintenance process with realistic maintenance schedules, workflows, roles, and responsibilities.

### ***Practice – Bringing It All Together***

The emergency response community understands the importance of running scenarios and exercises to maintain capabilities. However, the problem with CBRNE instrumentation is the lack of realistic scenarios for practice – for example, it is difficult to create a vapor cloud or biological incident on a routine basis. Even in coordinated exercises, CBRNE instrumentation and users rarely face realistic challenges. The effort to conduct practical exercises – by employing practice kits that are specific to a type of CBRNE detection equipment, or creating customized practice scenarios – is worth it. For example, many different “unknown white powders” can be easily obtained from a grocery store, thus providing an endless supply of inexpensive practice samples.

The right combination of ConOps, equipment sets, training, and upkeep provide the framework of a solid, sustainable CBRNE program. Practice is what pulls it all together. Many state and local governments can accomplish these simple, practical steps without greatly expanding their budgets. Users should challenge the ConOps and equipment – with challenge training and maintenance procedures – to ensure that they are best suited for today’s threats. When performed on an annual basis, this CBRNE refresh process will build capability, confidence, and readiness. Reminder: A five-year-old instrument in the hands of a trained operator with the right procedures is better than a shiny new toy that sits on the shelf.

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*Craig Crume is vice president and co-owner of [KD Analytical Consulting Inc.](#) He has more than 25 years of analytical experience training and supporting analytical equipment around the world and has published or presented more than 30 papers on field analysis. Since 2003, KD Analytical has provided training, instrument maintenance, and support to the CBRNE responder community through use of a web-based maintenance management system, [ReadiTrak™](#), and 24-hour support center.*

# Communications Decision Could Impact Emergency Response

*By Christina Crue*



**T**elecommunication changes may be coming to a little known but important third-party entity called the local number portability administrator. From a public safety perspective, though, these changes may not be for the better. At risk could be first responders' ability to locate some 9-1-1 callers, law enforcement agencies' capabilities to track criminals and terrorists by their telephones, and the post-disaster resilience of the telephone network. These three issues are on the table as the Federal Communications Commission (FCC) considers

a recommendation to change the provider of the local number portability administrator on 30 June 2015 and, by extension, affect these public safety capabilities.

## ***Identifying 9-1-1 Callers***

The first issue relates to the effective operation of the nation's current 9-1-1 system. When 9-1-1 receives a call from a "silent caller" – one who cannot talk because he or she is injured, panicked, unconscious, under duress, very young, or in a serious situation – that person does not identify where they are calling from. However, 9-1-1 operators and dispatchers can check the records that correspond to the caller's phone number and look up a billing address, telephone carrier, and other information that might help locate the caller. This information is stored in an automatic location information (ALI) database. But, when a number is "ported" – moved from one telecommunications company to another, or from one technology (wireline, wireless, or Voice over Internet Protocol) to another – ALI databases do not automatically sync the new information.

To resolve this, the information technology providers for 9-1-1 have worked with the current local number portability administrator, Neustar, to develop protocols for crosschecking their ALI databases against the porting information the administrator maintains. This process occurs thousands of times a week across the United States to keep ALI data current. However, the procurement for a new local number portability administrator does not mention continuation of this capability. This omission prompted the National Emergency Number Association, which represents the United States' 9-1-1 equipment providers, to voice their opposition. "9-1-1 services are the backbone of America's public safety infrastructure," the association wrote in a letter dated 22 August 2014 to the FCC. It concluded that the 9-1-1 system "must deliver 100 percent accuracy, and 100 percent reliability, 100 percent of the time."

## ***Tracking Law Enforcement Suspects***

The second capability at risk under the procurement that is before the FCC is a crucial tool for local, state, and federal law enforcement. Known as the Local Number Portability Enhanced Analytical Platform (LEAP), this tool allows law enforcement to track suspects by following their phone numbers, even if they change carriers or technologies in an effort

to elude investigators. LEAP is critical for maintaining warrants for wiretaps and call histories, and it is thus a staple in investigations and interdiction of terrorism, organized crime, drug cartels, and other high-level crime. According to an 9 August 2014 news report by the Washington Post, this service was used more than four million times to assist criminal investigations in the past year alone.

In the procurement for the new local number portability administrator, LEAP has been viewed as secondary to expediency of porting for consumers and thus not guaranteed. Law enforcement agencies have voiced strong concerns about this. The New York City Police Department, which queries LEAP more than 30,000 times a year, submitted in a letter to the FCC on 9 October 2014 that, without this tool, many of its criminal and counterterrorism investigations will suffer. The United States' FBI, Drug Enforcement Administration, Secret Service, and Immigration and Customs Enforcement also jointly weighed in, in a letter dated 11 August 2014 and submitted to the FCC, that law enforcement agencies rely on the "important and highly sensitive services" provided by the local number portability administrator "to assist virtually all of the significant criminal and national security investigations."

A third public safety service is not guaranteed in the procurement: the ability to port phone numbers en masse during or after disasters, in the case that telephone switch infrastructure is inoperable. This capability was used to port more than 300,000 numbers to functional switches after Hurricane Katrina in 2005, and some 60,000 numbers were ported after the 9/11 attacks in 2001. In fact, this capability proved sufficiently robust that public service commissions in both New York State and Florida have added it to their post-disaster protocols. However, the procurement before the FCC for the local number portability administrator would not ensure that this critical function continues.

### ***Transitioning, Testing & Validating Services***

Lastly, the current plan outlines that the entire local number portability database will need to be transitioned in approximately 6 months, though the initial timeline was to last 28 months. There are concerns that a seamless and proven transition could occur in such a short time to the satisfaction of the stakeholders listed above.

Although the selection of a vendor as local number portability administrator is the FCC's decision, these vital tools are essential and of interest to the broad public safety community. To assist professionals in law enforcement, public safety communications, and emergency management, FCC should consider requiring that these services be provided, and fully tested and validated, before any potential switchover in provider.

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*Christina Crue is a Certified Emergency Manager with nearly 15 years of public safety and emergency management experience in both the government and private sectors. She serves as vice president of Strategic Advisory Services for Witt O'Brien's. She holds a Masters in Emergency Health Services from University of Maryland University College.*

# Community Paramedicine – Bringing the Hospital Home

*By Joseph Cahill*



A number of states – including [California](#), [Colorado](#), and [Massachusetts](#) – have established [community paramedic programs](#). Community paramedics, who are selected based on experience and additional training above standard paramedic requirements, receive additional training on their expanded roles.

## **Gap Analysis**

Individual programs vary, but the first step is a gap analysis for providing care under the current system. Emergency medical services (EMS) cannot fill some gaps either because the medical techniques required are too far outside the current scope of paramedics or because the equipment required is not easily portable. The provision of “urgent services” is an extension of the traditional emergency role of the paramedic, taking pre-existing skills and adapting them to a new task.

One of the gaps identified in the current system is that it has two modes: (a) scheduled visits; and (b) transport to the emergency room. In urgent cases, patients have needs that are not immediately life threatening (therefore, not emergencies), but available visiting nurses or primary care physician visits are hours or days away. In such situations, patients may be reluctant to go to the hospital by EMS, especially considering that emergency rooms and the hospital rooms beyond them are finite, expensive resources that are stressful for some patients.

By partnering and coordinating with local [Visiting Nurse Association](#) providers, primary-care physicians, and EMS resources, the community paramedic is able to bridge this gap by providing on-demand staff that can cover the urgent need. In addition, community paramedics can help reduce the re-hospitalization rate; according to a 2009 study in the *New England Journal of Medicine*, this rate is 19.6 percent of Medicare patients within 30 days and 34 percent within 90 days of discharge. As an extension of the traditional EMS systems, community paramedics are able to provide coverage for these urgencies.





## **Cost Analysis**

Traditional EMS systems staff and equip their services based on the type and volume of work already allotted to them. Although community paramedic programs would add extra costs, paramedics already have knowledge and skill sets that would allow them to fill these gaps effectively without the cost of training new staff to the task.

As with many good ideas, community paramedic programs must have a financially viable model to follow. A number of models would be effective in covering the costs of such programs. In the staffing model, for example, the homecare agency contracts with the EMS agency to provide urgent services when needed outside the homecare agency's routine visits. Another model, the cost-savings share model, has the hospital system paying for the program with money saved by decreased overuse of their resources. In this model, the money comes not from the hospital, whose census would decrease, but from the Medicare system, which would reap the benefits of decreased hospitalization payments.

**According to a 2009 study in the New England Journal of Medicine, re-hospitalization rates for Medicare patients is 19.6 percent within 30 days and 34 percent within 90 days of discharge.**

By providing community paramedics with additional equipment suited to their tasks, such as i-STAT blood-analysis devices, and training them on in situ care rather than focusing on stabilization and transport, these pioneers can help patients stay out of emergency rooms and hospitals, which in turn would improve patients' health, quality of life, and survival, while strengthening the medical system overall.

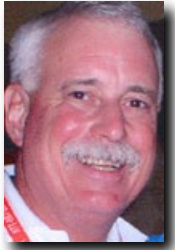
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*Joseph Cahill is the director of medicolegal investigations for the Massachusetts Office of the Chief Medical Examiner. He previously served as exercise and training coordinator for the Massachusetts Department of Public Health and as emergency planner in the Westchester County (N.Y.) Office of Emergency Management. He also served for five years as citywide advanced life support (ALS) coordinator for the FDNY – Bureau of EMS. Before that, he was the department's Division 6 ALS coordinator, covering the South Bronx and Harlem. He also served on the faculty of the Westchester County Community College's paramedic program and has been a frequent guest lecturer for the U.S. Secret Service, the FDNY EMS Academy, and Montefiore Hospital.*



# Resilience – Making a List & Checking It Twice

*By Stephen Grainer*



**M**uch has been said and written about the relative fragility of the U.S. electric power infrastructure and the need to improve its reliability and resilience. The effects of large-scale power outages and the intense and urgent need for restoration have been highlighted by impacts of numerous natural (weather) incidents in just the past five years – for example, the derecho and “Superstorm” Sandy that affected the eastern United States in 2012. In order to foster maximum resilience capacity, a sound strategic approach to developing resilience will probably rest on some basic tenets and practices, including “making a list and checking it twice” – or maybe more often.

## ***Providing Ground Support, Supply & Facilities***

Perhaps the most significant challenges for managing response to major power disruptions will revolve around logistics of the response. The logistics section of the Incident Command System encompasses six elements: supply, facilities, ground support, communications, medical, and food. Each of which may be managed or supervised by a unit leader during a large-scale incident. Whether managed by a unit leader, branch director, or logistics section chief, the absence of provisions to provide each of these elements will severely hamper the response. Although communications, medical, and food are critical needs, critical logistics needs in the response and restoration operations following Superstorm Sandy revolved around ground support, supply, and facilities.

Zepheniah (Zeph) Cunningham was the incident commander for the National Park Service Eastern Incident Management Team during the initial response and recovery operations at more than 15 National Park sites in New York and New Jersey following the onslaught of Superstorm Sandy. That team was responsible for managing all operations at the assigned National Park Service locations, including the Statue of Liberty, Ellis Island National Monument, and the Governor’s Island National Monument. In a personal interview with Cunningham on 12 November 2014, he stated, “Operations are simple, once the logistics challenges are resolved.” He noted a number of significant logistical challenges that could have confounded the best-intended operational initiatives.

In addition to basic operations, simply clearing access routes, removing debris caused by wind and water, and



securing many national treasures across two states posed numerous challenges for the team and all responding personnel. For example, within days of the power disruption and the loss of heating, ventilation, and air conditioning systems at several national monument facilities, personnel noted the onset of mold and mildew around numerous irreplaceable artifacts. These findings significantly increased the urgency to respond and raised the priority of restoring power to many of those monuments. The Eastern Incident Management Team was suddenly confronted with the need to restore power sufficient to establish air handling and movement within many facilities, which necessitated the acquisition of a large number of portable generators and, more important, fuel to keep those generators operating.

In many parts of the country, individual citizens as well as emergency services organizations have had and have used generators for years to provide emergency power when needed. For example, in the mid-Atlantic region since the severe winter weather of the late 1990s, emergency generators

*“Ironically, as was seen on national television night after night [following Superstorm Sandy], most commercial service stations had fuel but, because the power was out, they were unable to pump the fuel.”*

have become standard equipment for many households as well as most emergency services facilities. However, in regions not affected as frequently or severely, emergency generators are not a staple for many. In fact, following Superstorm Sandy, the demand for portable generators throughout the region overwhelmed the supply chain.

For the National Park Service, in order to avoid depleting the locally available supply of portable generators, it became a matter of issuing an emergency procurement requisition from a major national retailer and sending transports to the distribution center several states away to pick up the equipment and return it to the sites needing the emergency power. Local emergency and public utilities/service operations have experienced similar challenges in obtaining portable generators in recent years.

### ***Establishing a Fuel Supply Chain***

Once the generator issue had been addressed, the next challenge encountered was establishing a fuel supply chain to operate those generators at each of the various sites. Ironically, as was seen on national television night after night, most commercial service stations had fuel but, because the power was out, they were unable to pump the fuel. For those facilities that had alternative power, the lines of cars seeking fuel were incredibly long. The Park Service, not wanting to adversely affect the limited fuel availability, chose to “import” its own fuel supplies, which revealed two additional challenges.

The first challenge encountered was complying with federal, state, and local laws regulating the transportation of hazardous commodities, particularly interstate transport of flammable products. After identifying the constraints on transportation, the Eastern Incident Management Team found it necessary to bring fuel tenders from distant sources and by way of some circuitous routes. However, after several days of deliberations, those arrangements were made and fuel was brought into the affected region to enable the Park Service operations to recommence and function efficiently.

The next challenge revolved around establishing approved dispensing operations. Once again, recognizing the importance of complying with all local and state laws concerning fuel dispensing facilities – local service stations must comply with the same laws in most states – the Park Service was required to establish required approach, access, fueling, and exit corridors. In simple terms, the fuel dispensing sites were required to mark and control traffic flow into and out of each fuel-dispensing location. Although that may seem simple, during these operations, it necessitated the procurement of huge quantities of traffic control devices – literally hundreds of basic orange traffic cones to direct traffic flow into and out of each dispensing site. Cunningham chuckled when reflecting on having to explain to superiors in Washington, D.C., his approval to order hundreds, perhaps thousands, of orange traffic cones in order to continue his assigned operations.

Each incident presents its own unique challenges, but there are commonalities as well. One lesson from these reflections is that, although response operations may appear simple on the surface, underlying factors – particularly those related to logistical support – can and should be identified and addressed from the outset and throughout an incident. According to Cunningham, should the need arise in the future, his team will make their lists and check them twice, based on new lessons learned, to make sure that operations as planned can be performed without unanticipated challenges. The National Incident Management System and basic Incident Command System provide a template and a direction that enable incident management organizations and personnel to develop systematic methodologies to adapt to challenges that, otherwise, may impede effective response operations.

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# Changing the Future of Human Relations

By Samuel Johnson



From Ferguson, Missouri, to New York City, Americans have been protesting in the streets and chanting, “Hands up. Don’t shoot,” and posting on media outlets “#ICantBreathe.” These images and expressions of fear have become synonymous with a movement to end police brutality and the killing of African American people by police nationwide. Although citizens are exercising their right to protest, as officers stand guard to protect communities from mass riots and chaos, both sides are missing an opportunity to use these incidents as a valuable teachable moment. The lessons learned from these situations point to aspects of “miseducation” in human relations. Contrary to handling human problems peacefully from an organizational and interpersonal relationship perspective, this miseducation process is the way in which society uses social bias to hinder the development of interpersonal and intergroup skills.

## ***A Simple Solution – Respect & Education***

These barriers are most common in urban communities where the demographic is comprised mainly of African American residents, and the proverbial “us versus them” mentality between law enforcement officers and citizens has proven to be the catalyst for strained relationships. Determining what is needed to change this mentality and forge a new and sustainable relationship between law enforcement agencies and communities is simple: the active presence of mutual respect. Law enforcement officers should respect the communities they serve as much as they respect the ones in which they live. In turn, citizens should respect each officer’s position of authority within the community. The solution may be simple, but implementing it is not.

***“Barriers are most common in urban communities where the demographic is comprised mainly of African American residents, and the proverbial “us versus them” mentality between law enforcement officers and citizens has proven to be the catalyst for strained relationships.”***

Respect must be built on a foundation that educates both sides on how to interact properly. For law enforcement, this requires that officers appropriately and fairly enforce laws, without demeaning or degrading citizens for any reason. Citizens have the responsibility to educate themselves on current laws, and make conscious efforts to obey them. By doing this, citizens gain a better understanding of when law enforcement officials are, and are not, working within the prescribed scope of their lawful authority. This valid “education” will begin to help remedy negative interactions by creating an understanding of roles and responsibilities.

### ***“The Stop” – Responsibilities of Citizens & Officers***

On 17 July 2014, citizen Eric Garner died after being stopped by police officers on suspicion of selling untaxed cigarettes, which is a violation of law in New York City. The Garner case is a teachable moment with valuable lessons that need to be learned in an effort to prevent other such tragedies. “The stop” is typically the initial interaction between a citizen and a law enforcement officer. Stops occur whenever, in the course of their duties, officers conduct investigations into violations of criminal, civil, and traffic laws. How this interaction begins generally sets the tempo for how the encounter plays out.

Some citizens have publicly asked, “What gives police the authority to stop any person in the United States of America?” The Supreme Court case that defines this authority is [\*Terry vs. Ohio\*](#), 392 U.S. 1 (1968). Often referred to as the “Terry Stop,” this case gives police officers the right to use a brief detention of a person to investigate crimes. This investigation is built on an officer’s reasonable and articulable suspicion that the person stopped is committing a crime, has committed a crime, or is about to commit a crime.



The question that rises from the Garner and similar cases is: “What must be done in order to reduce the risk of a minor situation turning into a tragedy?” Law enforcement officers must:

- Approach citizens in a professional and respectful manner;
- Recognize that it is their responsibility to explain to each citizen the reason for the stop in a polite and courteous way; and
- Clarify their actions by answering questions regarding the stop when citizens ask.

Citizens on the other hand must:

- Recognize an officer’s authority to stop them;
- Not become defensive or irritated, as these reactions will aggravate the encounter;
- Allow the officer to explain the reason for the stop; and
- Give the officer the opportunity to investigate the perceived reason for the stop.

Once the investigation is concluded, officers should explain their findings and the outcome of their investigations to the citizen. It is incumbent upon officers to explain the findings of their investigation to every citizen stopped to reassure them that officers are operating within the scope of their authority. This requires that officers are familiar with the laws they are enforcing and are able to articulate the usage of these laws, both orally and in writing.

### ***Abandoning Myths & Building Relationships***

A fundamental part of being a good police officer is not just being able to identify the “bad people,” but also identifying who the “good people” are in the community, and not subjecting them to the same aggressive enforcement as those who are committing criminal acts. Officers should abandon subjective “myths” and unproven theories regarding the people they serve. Building relationships with people in the community begins when police officers suspend judgment, and law-abiding members of the community make officers feel welcome within their neighborhoods. Minor pleasantries, good manners, and common sense lead to conversations and mutual learning about others. Such experience builds commonalities and relationships. Just as citizens do not want officers to view them as “criminals,” officers do not want to be viewed as “enemies.” When mutual respect exists between citizens and law enforcement officers, communities can begin to eliminate social bias and move in the direction of sustainable adaptive change for the better.

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