Too Close

Editor's Notes

By Catherine Feinman

As the Ebola virus crosses borders and potentially travels beyond Africa, public health officials are trying to quickly track anyone who may have encountered an infected man who traveled through two airports within days of his death. According to the World Health Organization, the time interval from infection to onset of symptoms can be as little as two days or as many as 21 days. A direct flight from Lagos, Nigeria, to the United States (and to many other parts of the world) takes less than 13 hours – much less time than it takes symptoms to develop.

Patrick Rose leads this issue of the *DomPrep Journal* with an article about broadening the public health security agenda. He asked the readers to share their thoughts on the priority level of public health safety initiatives, investments in public health preparedness, detection and surveillance systems, and staffing shortfalls. The results of that poll are presented in "Biothreat Preparedness – Less Talking, More Doing." A four-member panel of subject matter experts discussed this topic further in "Public Health – How Prepared Is the Nation?"

Middle East Respiratory Syndrome (MERS), Lassa fever, and Ebola are no longer "foreign" diseases in this globalized economy. Robert Hutchinson emphasizes the need for a national strategy for biosurveillance that effectively reaches all levels of the public and private sectors. With increased intercontinental travel and increased biological, pandemic, and other disease threats, Raphael Barishansky and Audrey Mazurek point out that countries must effectively cooperate and communicate to prevent the spread of disease within and between these interconnected communities with a Global Health Security strategy.

Preparing for naturally occurring outbreaks of deadly diseases may help nations better prepare for an attack involving weaponized bioagents. In either case, Richard Schoeberl describes how adequate defense for a bioterrorism threat requires fortification of the public health infrastructure as well as the establishment and continuance of a good healthcare system. Fortifying the health infrastructure involves building and maintaining a strong disaster volunteer force – including the Medical Reserve Corps – as mentioned in Harlan Dolgin's article.

Rounding out the issue, two articles address incident management – from special facilities to staging area managers. Joseph Cahill's article explains the planning involved in establishing special facilities to provide shelters, vaccinations, and other emergency services to the public. Whereas Robert Mueck's article addresses management of resources at the scene to help establish a check-in post, organize and track resources, and share information with the command post.

About the Cover: Contagious viruses pose public health threats that are compounded when carried onto airplanes destined for major cities around the world. (iStock Photos)

Broadening the Public Health Security Agenda

By Patrick P. Rose, Viewpoint

Midway into 2014, public health emergencies around the world pepper local news headlines and raise concern for U.S. residents. Some biological incidents capture the broader attention of the public, for example: the novel emerging infectious disease Middle East respiratory syndrome coronavirus (MERS-CoV) in the Kingdom of Saudi Arabia; the Ebola hemorrhagic fever virus epidemic in western Africa; or the seemingly continuous threat from influenza virus out of Asia. Others remain a sidebar in the news, such as: the chikungunya virus epidemics in eastern Africa and the Caribbean; or the current dengue virus epidemic in the 2014 Soccer World Cup and 2016 Olympics host nation Brazil.

However, none of these threats is far beyond the reach of domestic borders. Few pharmaceutical interventions exist for many endemic infectious diseases that continue to spread beyond previously isolated/neglected geographic regions. Even fewer pharmaceutical interventions, if any, exist for emerging infectious diseases such as MERS-CoV. Often the painful consequence of unavailable pharmaceuticals, if other nonpharmaceutical interventions are not immediately applied, is significant morbidity and/or mortality. Given the nature of some of these diseases with either a high mortality rate – the estimated mortality rates for MERS-CoV and Ebola are 30-60 percent and 59-90 percent, respectively – or significant morbidity rate, the effect is felt well beyond public health institutions and hospitals.

What is intensifying the threat is that, for many diseases, the vulnerable population expands beyond the immunocompromised, the children, and the elderly. Some of these diseases have been aggressively reaching healthy members of society, including front-line healthcare workers, who are raising concerns that these disease outbreaks may severely stress the workforce and subsequently the critical infrastructure.

The Threat of Complacency & Disillusion

Public health agencies abroad, assisted through international collaboration, race against the clock to mitigate the destruction caused by these threats through voluntary quarantine/isolation, social distancing, and medical intervention. Despite best efforts, the sheer magnitude of these public health emergencies is overwhelming the response capacities and leading to further spread of disease. The first two cases of individuals infected with MERS-CoV arrived in the United States in May 2014 after traveling on transatlantic flights with hundreds of other passengers. Arguably, there has not been the mass influx of patients with MERS-CoV despite the millions of people taking the pilgrimage to holy sites in the Kingdom of Saudi Arabia.

There also has not been the anticipated spread of secondary cases of persons throughout the United States after having traveled to the region – despite the fact that, in the Kingdom of Saudi Arabia, up to 75 percent of all new infections reportedly occur through secondary exposure. With only two U.S. cases confirmed to date, the threat may seem minimal; however, there is a risk of complacency. Unlike any other natural or manmade threats, biological agents have the capability to evolve and alter their disease transmission. Over time, these pathogens can rapidly and unexpectedly change transmission patterns. Similar to a wildfire blazing through newly discovered dry bush, a pathogen can race through a previously unexposed population after reaching other parts of the world.

The consequences of most disasters are tangible and often measured in the cost of infrastructure destruction. The effect of a public health emergency is not measured the same way because the destruction does not have the same level of visibility. Houses do not crumble and key infrastructure does not immediately fail. Instead, the consequence of a public health disaster is measured in lives permanently disabled by the disease or lives lost.

For most other types of catastrophes, there are measurable efforts to buy down risk – for example, improved tornado-resistant shelters, higher levies and/or dams for flooding or hurricane-driven flood surge, or better screening procedures

for improvised explosive devices. Initiatives to increase resilience against public health threats – expanding hospital surge capacity or investing in specialized medical equipment and supplies – are far less visible and sometimes even more costly, but they also are necessary. Different parts of the United States regularly face a variety of natural disasters such as hurricanes, tornadoes, or wildfires. At the same time, every part of the United States faces the threat of a public health disaster as ports of entry invite travelers from around the globe.

Actual incidents of public health disasters that have directly affected the U.S. population have been rare. Thus, reconciling investments in increased public health security can be difficult for those not immediately involved in the efforts to stem the effects of the next disease outbreak. As a result, the nation's preparedness levels are below expected capabilities – with uneducated responses, understaffed healthcare system, and limited response plans – to appropriately respond to a public health disaster. Moreover, existing response efforts reflect little, if any, understanding of how complex and distinct disease outbreaks can be.

Unlike any other type of disaster, the range of scenarios in a public health disaster is rather large, and operational constraints change depending on the type of disease outbreak. It is, therefore, enormously important to have constant situational awareness and remain vigilant of ongoing disease outbreaks everywhere. Overwhelmed and underprepared response officials inevitably resort to ineffective measures – for example, closing national borders as Africa did in March 2014 following an Ebola outbreak – hoping to presumptuously curtail the threat to their jurisdictions.

Connecting the Dots to Save Lives

A new push has recently been initiated to raise the stakes that public health emergencies are in every way as serious of a threat as other natural or manmade disasters. The international community, though not necessarily as a whole, acknowledges that public health security is an increasingly serious vulnerability and that borders or oceans do not limit this vulnerability. Efforts such as the Global Health Security Agenda underscore the importance of a collaborative effort to increase public health preparedness, but this effort should not be limited to looking beyond domestic borders. State and local agencies often take the lead in detecting and responding to domestic biological incidents. Subsequently, these same agencies are the first to enact response measures to mitigate further spread where, in many cases, additional support in the form of manpower or supplies from other sources is limited or unavailable.

From a domestic preparedness perspective, it is important to develop appropriate plans for potential response needs following a public health emergency anywhere in the world. State and locals also need to take the lead in demonstrating that a whole of government approach with a standard operating procedure can best apply limited resources toward saving lives. Improving domestic public health preparedness requires coordinating with law enforcement, customs and border protection, emergency managers, along with public health officials.

Detection and prevention at this level increase the chance of significantly reducing the effect of a disease outbreak, regardless of available resources. With natural disasters seemingly on the rise as a whole, integrating public health security investments connects the dots to an overall higher all-hazards preparedness level. Satellite and radar technology can detect a hurricane several days or more in advance, but the next deadly wave of MERS-CoV may have already begun.

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The views expressed in this article are those of the author and do not necessarily represent the position or policy of Gryphon Scientific, LLC.

Patrick P. Rose, a senior analyst at Gryphon Scientific, holds a Ph.D. in infectious diseases and is a subject matter expert on national security issues related to public health security. He works with federal and local stakeholders to address requirements and gaps that produce vulnerabilities in public health security. In addition, he supports efforts domestically and internationally in the field and at the policy level to reduce the proliferation of biological weapons and to increase public health security awareness. These efforts include promoting greater engagement in the Global Health Security Agenda. He is an alumnus of the Emerging Leaders in Biosecurity Initiative and serves as an adjunct assistant professor at the University of Maryland Department of Epidemiology and Public Health.

Biothreat Preparedness – Less Talking, More Doing

By Catherine Feinman, Editorial Remarks

As the Ebola virus currently spreads across West Africa, public health officials around the world are closely monitoring this and other biological threats – both natural and malicious. A July 2014 flash poll of DomPrep readers suggests that funding and staffing cuts may play a large role in the nation's ability to fully prepare for future biothreats. This article is a compilation of the anonymous survey responses shared by emergency planners, responders, and receivers.

Compared to other natural and human-caused hazards, biothreats are "one of the most underappreciated threats." Unlike an improvised explosive device, which affects a specific location, or a hurricane, which offers hours or days of advance warning, bioagents can spread beyond geographic borders with the hosts sometimes unaware of the dangerous pathogens they are carrying. With the potential for spreading infections silently within and between communities, biothreats should hold a high priority for an all-hazards preparedness strategy (Figure 1).

Of course, the success of such strategies is dependent on early detection and accurate identification of the bioagents (Figure 2). Proper risk analysis, based on how widespread and how fast the biothreat is spreading, may offer some advanced warning but, "at some point, the system will break and it will not be pretty." The full impact of a biothreat will remain unknown until a successful attack occurs. "Hopefully then, this event will serve as a wake up call. Being aware of the type of problem is a great part of being selective in response. Good intelligence and accurate threat analysis is key in a time of decreasing resource allocation."

Figure 1:
Compared to other hazards (e.g., improvised explosive devices including dirty bombs, active shooters, wildfires, hurricanes, tornadoes, floods, chemical spills/releases/attacks, cyber threats), what priority should biological threats (natural and malicious) have in an all-hazards preparedness strategy?

Educating, Training & Staffing

Public health awareness, education, and training are important steps toward building resilient communities. Adequate funding and effective training will help communities identify biothreats, minimize risks to responders, caregivers, and the public, as well as respond to a biological incident. To better prepare emergency services personnel to safely and appropriately respond to any given biothreat, respondents shared the following suggestions (Figure 3):

- Make public health a full partner in all-hazards preparedness;

- Teach first responders about public health, especially epidemiology and surveillance;

- Educate the public on the importance of vaccines, proper hand hygiene, not travelling while possibly contagious, and other preventative actions;

- Include the "CBRNE Medicine" module into the curricula of universities' medical/nursing schools to enhance the diagnostic capabilities of future frontline health professionals; and
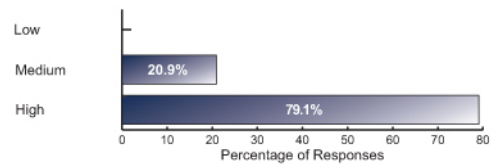

Figure 2:
How important is early and accurate identification of a biological agent in the context of an all-hazards response?
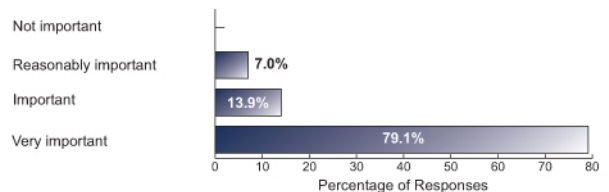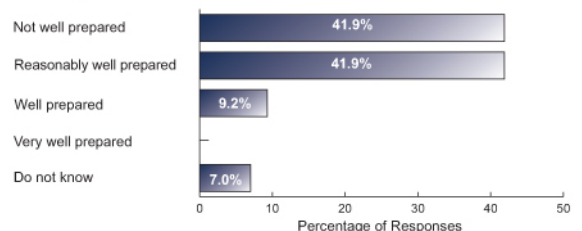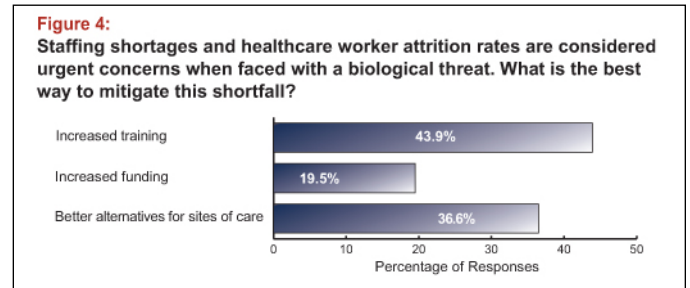

Figure 3:
If detection and surveillance systems were successful in detecting a biological threat, how prepared would the emergency services personnel of most major jurisdictions be to safely and appropriately respond to any given biological threat?

- Train hospital staff and first responders on the no-cost, two-day course entitled "Emergency Response to Domestic Biological Incidents," offered by the National Center for Biomedical Research and Training through Louisiana State University.

For an incident involving a bioagent, staffing shortages and attrition rates of healthcare workers are significant concerns. Because of the nature of the incident, understaffed hospitals likely would not be able to care for the influx of patients during a biological incident. To mitigate these staffing shortfalls, respondents reported that increased training to help hospital staff understand the threat and better alternatives for alternate care sites would be more effective than increased funding for additional staff (Figure 4).

Respondents expressed concern about the lack of infrastructure currently available for alternative care sites – with little staff available when the infrastructure does exist. For example, the current plan for vaccinations or prophylaxis points of dispensing response is problematic for many jurisdictions. "There are not nearly enough emergency workers to pull that off, especially with the given 48-hour requirement for every man, woman, and child to be covered."

Figure 4:
Staffing shortages and healthcare worker attrition rates are considered urgent concerns when faced with a biological threat. What is the best way to mitigate this shortfall?

Response	Percentage
Increased training	43.9%
Increased funding	19.5%
Better alternatives for sites of care	36.6%

An epidemic, pandemic, or other public health emergency could overwhelm local hospitals and public health laboratories. Common health concerns – for example, measles, pertussis, tuberculosis, and emerging diseases – keep public health departments busy on a daily basis, which does not leave much time and resources for surge capacity. Alternative methods for dispensing medicines must include consideration of the realistic ability to staff the sites. Plans for surge personnel resources could include the Medical Reserve Corps. Although health departments have made progress, "there is still much work to do and to sustain."

Funding

Although investment is needed in many areas of public health preparedness (Figure 5), funding is a significant concern among the survey respondents. "The technology and expertise are available for public health staffing, but there is no money to staff at appropriate levels." Continuing budget cuts may make it difficult to deploy a full public health response when needed, but current spending must be done wisely.

One respondent pointed out that, "Investment needs to be made in public health for strengthening the community as well as for the infrastructure that provides surveillance, outbreak response, and training." Another respondent stated that funding for technology has surpassed funding for oversight and effective regulation and asked, "If a nation cannot respond in a timely and effective manner to nonterrorist emergencies, how can it be trusted to respond to terrorist attacks?"

Although the 2009-2010 response to H1N1 demonstrated the nation's public health systems ability to address a large threat, subsequent funding cuts have undermined that success, "We didn't "dodge the bullet," we responded vigorously and appropriately ... and it worked!" Regardless of the specific amount of funding, a strategic plan for public health preparedness should outline priorities to maximize the available resources.

Figure 5:
Where do you see the greatest need for investment in domestic public health preparedness?

Category	Percentage
Vaccinations	2.3%
Antibiotics, antidotes & other medical countermeasures	21.0%
Surveillance & detection technology	23.4%
Risk & threat analyses	14.0%
Training for hospitals and responders	21.0%
Personal protective equipment	2.3%
Other	16.0%
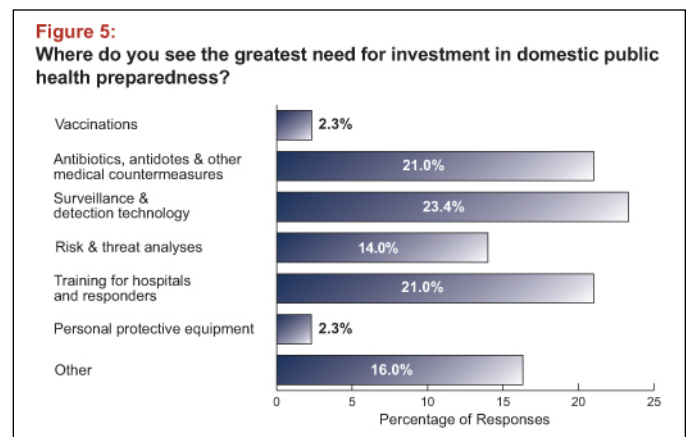
Taking Action

Of course, talk without action is unproductive. Best practices and lessons learned develop over time, with actions to support their efficacy. "How can we really say what is a best practice at this point, especially for disasters we have little experience with (bioterrorism, for example)?" The National Health Security Preparedness Index, developed by the Association of State and Territorial Health Officials through a cooperative agreement with the Centers for Disease Control and Prevention, is one tool that provides an annual measure of health security and preparedness at the national and state levels.

To help agencies begin "doing," survey respondents shared the following suggestions for improving the nation's ability to prepare for and respond to biological incidents:

- Think of every individual as part of an emergency prevention and response team;

- Cooperate with other agencies outside of hospitals and the medical field;

- Develop a tactical or strategic view or approach for handling an emergency;

- Ensure that the state-level chain of command is ready to manage an incident;

- Define a course of action that anyone could use to fill gaps when the chain of command is compromised;

- Create face-to-face opportunities to plan, train, exercise, and refine the plan;

- Involve the public as the first line of defense through awareness and encourage more reporting similar to, "If you see something, say something";

- Emphasize year-to-year improvements; and

- Share what works – and what does not work – between jurisdictions facing similar threats.

"If we really want to see improvements, it's time to get serious about helping each other out, avoiding mistakes others have made, and building resilient communities. Policymakers need to understand the

Public Health – How Prepared Is the Nation?

Public health encompasses pandemics and bioterrorism incidents as much as injury and illness threats following other types of disasters. This podcast interview brings together subject matter experts to discuss the challenges, roles, and responsibilities of state, local, and federal agencies when dealing with a public health disaster.

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Panel Members

Patrick P. Rose, Ph.D, Moderator
Senior Analyst, Gryphon Scientific

Ellen Carlin, DVM
Principal, Carlin Communications

Eric Toner, MD
Senior Associate
UPMC Center for Health Security

Thomas K. Zink, MD
Associate Professor, Institute for Biosecurity, College for Public Health & Social Justice, Saint Louis University

shared responsibility aspect of preparedness and fund efforts that foster that kind of outcome."

Catherine Feinman joined Team DomPrep in January 2010. As the editor, she works with writers and other contributors to build and create new content. With more than 25 years experience in publishing, she previously served as journal production manager for Bellwether Publishing Ltd. She also volunteers as an emergency medical technician, firefighter, secretary of the Citizen Corps Council of Anne Arundel County and City of Annapolis, and a Community Emergency Response Team (CERT) trainer.

Bioterror – The Threat, The Defense & The Future

By Richard Schoeberl, Health Systems

The occurrence of a bioattack is difficult for many people in the United States to comprehend. What makes a bioattack unique from almost all other attacks is that it could convert normal daily objects into weapons. A simple handshake, sharing a pencil, a doorknob, or even a kiss on the cheek could transfer toxins. The incubation phase for anthrax is typically more than two weeks, so it is possible for someone to exhibit symptoms several weeks after exposure. The incubation period also can take months, according to the Centers for Disease Control and Prevention's (CDC) website.

High-Consequence Biothreats

Bioweapons are transmissible and can spread easily beyond the initial target. For example, anthrax can infect humans when they consume, touch, or inhale the spores. The inhaled form is the most hazardous and, among the 18 cases identified in the United States during the 20th century, the casualty rate was 75 percent, according to the CDC's website. After the terrorist attack in fall 2001 in which anthrax spores were released through the U.S. mail system, five of the 11 people who were exposed died.

The increasing danger of bioterrorism has been strongly debated within the national security arena for more than a decade. In 2007, Congress established a commission of experts called the "Commission on the Prevention of WMD [Weapons of Mass Destruction] Proliferation and Terrorism," which concluded in its December 2008 report that the chances were better than 50-50 that a WMD would be used in a terrorist attack somewhere in the world by 2013.

Although a catastrophic attack has not occurred yet, extremists now have greater access to the information and the technology necessary to generate and spread bioweapons. It is important to note that, although it is relatively inexpensive to manufacture bioagents in large quantities, complex bioweapons are complicated to develop and manufacture. Realistically, any nation with a plausible, highly developed pharmaceutical and medical industry has the means of mass-producing bioweapons.

Security of agents in second-world countries is questionable, especially when tracking errors occur the United States. According to a 25 February 2013 report by the Government Accountability Office, 415 biolaboratories registered with the CDC and the U.S. Department of Agriculture in 2004 to work with select bioagents. By 2010, that number had grown to 1,495, "Increasing the number of laboratories also increases the aggregate national risk" because of the likelihood of deliberate or accidental escape.

In early July 2014, scientists discovered decades-old vials of the smallpox virus in the storage room of a National Institute of Health laboratory located near Washington, D.C. At the time of discovery, it was uncertain if any of them were viable samples. However, the CDC has since announced that at least two of the six vials did in fact contain infectious agents. This recent lapse in security raises questions about how a nation can provide adequate defense – prevention, protection, detection, treatment, and decontamination – from a bioterrorism attack.

Prevent, Protect, Detect, Treat & Decontaminate

Prevention can take numerous forms. First, fortifying the U.S. public health infrastructure would enhance the overall safety of citizens. No longer a distant fear, the threat of bioterrorism deliberately being used to cause chaos and death is at present a widespread alarm. "Especially troubling is the lack of priority given to the development of medical countermeasures – the vaccines and medicines that would be required to mitigate the consequences of an attack," the January 2010 Commission Report Card found. Second, international disarmament and continued inspections could discourage production and dissemination of biowarfare agents by second- and third-world countries. Third, intelligence agencies could identify possible threats and allow the government to take preventative action.

Significant progress against a bioterror hazard largely depends on understanding the threat, which requires different investments by the government and private sector partners. Without recognition of preventive

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actions, the nation's preparedness programs will be insufficient and practitioners could potentially overlook vital opportunities to thwart such attacks.

Unfortunately, *protection* against bioterrorism is inadequate. Personal protective equipment based on local and regional needs, along with hazard vulnerability analysis, include protective suits, clothing, gas masks, and filters, which offer limited protection for only short periods of time. However, the perseverance of bioagents such as anthrax makes such protections mainly useful for only military personnel and first responders. Since anthrax can remain active and potentially [lethal for at least 40 years,](#) which is longer than most other agents, protection comes from the establishment of a good healthcare system. In addition, although vaccines frequently offer limited protection against genetically engineered bioagents designed to defeat vaccines, inoculation is a type of protection that would provide considerable protection against naturally occurring agents.

Detection of bioweapons can be difficult. U.S. forces suffered without reliable bioagent detection systems in the Gulf War era. Consequently, a number of detection systems have been developed and exist on the market today, including: SMART (Sensitive Membrane Antigen Rapid Test); JBPDS (Joint Biological Point Detection System); BIDS (Biological Integrated Detection System); and IBAD (Interim Biological Agent Detector). However, it still often takes a few hours to several days to detect contact with bioagents.

Detection is critical because *treatment* options after infection depend on whether the infectious agent has been identified. If the agent has not been recognized, considerable doses of antibiotics could be given in hopes of finding the right one. As with protection, treatment of infected persons depends largely on the establishment and continuance of a reliable healthcare system.

Once dispersed, there is an urgent need for decontamination. Unlike chemical weapons, which dissolve over time, bioagents can potentially multiply; agents can mutate, reproduce, multiply, and spread over a large geographic area. Because of the length of time it may remain active and its high resistance to eradication, anthrax as well as other bioagents make decontamination

of exposed persons a mammoth task. The procedure requires enormous dedication of both personnel and time. Even with suitable planning and training, the requirement demands a considerable contribution of resources. As previously mentioned, decontamination of those infected depends largely on the establishment and continuance of a good healthcare system.

Warnings About Future Attacks

Representatives from both the Obama and Bush administrations have been troubled by the potential for a bioterrorism attack. Many have expressed looming concerns:

- In December 2004, a [report from the National Intelligence Council](#) warned, "Our greatest concern is that terrorists might acquire biological agents."

- Michael Chertoff, the homeland security secretary from 2005 to 2009, told a reporter of *[The New York Times](#)* [in 2011](#), "In terms of catastrophic attacks, bio was at the top of the list."

- In 2008, U.S. Director of National Intelligence John Michael ("Mike") McConnell described a bioattack as his "[personal greatest worry](#)."

- On 12 February 2009, McConnell's successor Dennis Blair warned the Senate Select Committee on Intelligence that, "the terrorist use of biological agents represents a growing threat."

- In November 2009, the National Security Council projected that a bioattack could place "hundreds of thousands of people" at risk of death and cost more than $1 trillion.

- And the December 2008 Commission report surmised, "To date, the U.S. government has invested most of its nonproliferation efforts and diplomatic capital in preventing nuclear terrorism. The commission believes that it should make the more likely threat – bioterrorism – a higher priority."

Positioning the government to deal more effectively with catastrophic bioterrorism through prevention, protection, detection, treatment, and decontamination requires reforming and refining a federal system that can supply the adequate level of assistance to state and local communities. The current administration

and Congress should move rapidly to modernize the existing system, diminish government red-tape, and ensure the capacity to respond to a cataclysmic bioterror threat, and incorporate and complement local, state, and federal operational capabilities before a crisis ensues.

An emergency event is not the time to exchange contact information. It also is imperative to keep in mind that there is no guarantee that a biolaboratory, no matter how secure or controlled, will withstand natural disasters such as floods and fires. Moreover, security breaches and incompetence are always possible. All of these issues must be considered to protect the nation and its communities from potential biothreats.

Richard Schoeberl has more than 17 years of counterintelligence, counterterrorism, and security management experience, most of it developed during his career with the Federal Bureau of Investigation, where his duties ranged from service as a field agent to leadership responsibilities in executive positions both at FBI Headquarters and at the U.S. National Counterterrorism Center. During most of his FBI career, he served in the Bureau's Counterterrorism Division, providing oversight to the agency's global counterterrorism effort. He also was assigned numerous collateral duties during his FBI tour – serving, for example, as a Certified Instructor and as a member of the agency's SWAT program. He also has extensive lecture experience worldwide and is currently a terrorism and law-enforcement media contributor to Fox News, Sky News, al-Jazeera Television, and al-Arabiya.

Importance of the Global Health Security Agenda

By Raphael M. Barishansky & Audrey Mazurek, Public Health

The genesis of the Global Health Security (GHS) agenda was to address issues caused by: increased intercontinental travel; increased biological, pandemic, and other disease threats; and the need for increased international cooperation and communication. The GHS agenda elevates political attention, broadens participation, and focuses commitments, coordination, and collaboration. Past public health incidents of worldwide consequence entailed challenges in areas such as communication between nations, consistent public messaging, vaccine/anti-viral distribution, and surge management.

Prevention, Detection & Response

Keeping these challenges in the forefront, the GHS agenda is an effort between the U.S. government, 28 other countries, international organizations, and public and private stakeholders, to "accelerate progress toward a world safe and secure from infectious disease threats and to promote global health security as an international priority." In addition, within the United States, the Department of Health and Human Services, Department of State, Department of Defense, Department of Agriculture, Centers for Disease Control and Prevention (CDC), and U.S. Agency for International Development will lead the effort to fulfill the U.S. government's commitment to GHS.

The overall goal of the GHS agenda is to prevent avoidable catastrophes and epidemics, detect threats early, and respond to outbreaks as rapidly and effectively as possible, thus promoting security as an international priority. The GHS agenda will include programs to help countries develop national infectious disease laboratories, public health electronic reporting systems, and emergency operations centers. The specific objectives of the GHS agenda include:

Prevention

• Prevent the emergence and spread of antimicrobial drug-resistant organisms and emerging zoonotic diseases, and strengthen international regulatory frameworks governing food safety;

- Promote national biosafety and biosecurity systems; and

- Reduce the number and magnitude of infectious disease outbreaks.

Detection

- Launch, strengthen, and link global networks for real-time biosurveillance;

- Strengthen the global norm of rapid, transparent reporting and sample sharing;

- Develop and deploy novel diagnostics and strengthen laboratory systems; and

- Train and deploy an effective biosurveillance workforce.

Response

- Develop an interconnected global network of emergency operations centers and multisectoral response to biological incidents; and

- Improve global access to medical and nonmedical countermeasures during health emergencies.

Understanding Health Threats

A disease threat anywhere can mean a threat everywhere, including from: the emergence and spread of new microbes; globalization of travel and trade; rise of drug resistance; intentional or inadvertent release of dangerous pathogens; and terrorist acquisition, development, and use of biological agents. In today's interconnected world, these threats emerge and spread faster than ever before and no single country can address them alone.

To that end, in 2005, the World Health Organization (WHO) promulgated core International Health Regulations (IHR), which specifically outline the need for countries to detect, assess, notify, and report events, and respond to public health risks and emergencies of national and international concern. Although all 194 WHO member states adopted the IHR, fewer than 20 percent of countries reported reaching full compliance with these regulations by 2012. In the global challenge described by the GHS agenda, "Vulnerabilities include geographic areas with limited disease surveillance systems, reluctance to share outbreak information or biological samples, emergence

of new pathogens and development of drug-resistance, and the specter of intentional or accidental release of biological agents."

When reviewing some of the recent disease threats that parts of the world have encountered – such as the severe acute respiratory syndrome (SARS), swine flu (H1N1), and even the more recent Middle East respiratory syndrome coronavirus (MERS-CoV) and avian influenza (H7N9) outbreaks – it is evident that a well-planned agenda with input from a wide variety of stakeholders is a priority. Every year, new infections, together with the emergence of drug-resistant pathogens, pose challenges to global health as well as political and economic stability. The speed at which the SARS virus spread across international borders in 2002-2003 to infect some 8,000 people and kill more than 700 worldwide remains a concern within the global public health community. The CDC estimated that the 2009 H1N1 influenza pandemic killed approximately 284,000 people globally in the first year alone.

Impact at the State and Local Levels

All emergencies are local. Just as with nuclear, chemical, or even cybersecurity attacks, health threats have the potential to cause enormous damage in terms of lives lost, economic impact, and ability to recover. In reviewing just the element of economic impact, the SARS outbreak in 2002-2003 cost $30 billion in only four months and the anthrax attacks of 2001 cost more than $1 billion to clean up. It is also critical to remember that public health agencies typically are not in a position

to handle severe health threats alone, and will need assistance from emergency management, response partners, healthcare sector, and others.

As Acting Deputy Defense Secretary Christine Fox noted on 13 February 2014 in a press release, "[The GHS agenda] establishes a roadmap for progress that ultimately depends on collaboration between the health and security communities." State, local, tribal, and private sector partners can help advance the GHS agenda by continuing to enhance their capabilities and capacity to respond and manage health threats. The partnerships built during the state and local planning and collaboration efforts with key response agencies following the 2001 anthrax attacks and the 2004 Cities Readiness Initiative (CRI) can be leveraged. Additionally, the March 2011 Public Health Preparedness Capabilities and the January 2012 Healthcare Preparedness Capabilities include a wide range of planning, training, and operational elements that state and local jurisdictions should meet to improve their capabilities to respond and recover from incidents.

Simply participating in the planning and operationalization for these capabilities will be essential to successful early detection, response, recovery, and mitigation of various small- and large-scale public health emergencies. The capabilities focus on building capacity and capability across agencies and jurisdictions regardless of the type of hazard, such as emergency operations coordination, communication, fatality management, mass care, medical countermeasure dispensing, medical surge, non-pharmaceutical interventions, laboratory capabilities, and surveillance and epidemiological investigation.

The Future of Health Security

Over the next five years, the U.S. government has committed to advancing the GHS agenda by:

- Working with at least 30 partner countries to prevent, detect, and effectively respond to infectious disease threats, whether naturally occurring or caused by accidental or intentional release of dangerous pathogens;

- Working closely with global partners to build GHS capacities in areas such as surveillance, detection, and response in order to slow the spread of antimicrobial resistance, establish national biosecurity systems, reduce zoonotic disease transmission, increase

routine immunization, establish and strengthen national infectious disease surveillance and laboratory systems, and develop public health electronic reporting systems and emergency operations centers;

- Holding numerous GHS partner events with the goal of developing additional commitments from other countries – for example, the White House will host an event in fall 2014 to highlight progress;

- The U.S. Department of Defense, Defense Threat Reduction Agency, and CDC devoting $40 million to fund GHS activities in up to 10 countries in fiscal year 2014;

- Continuing to build on best practices and successes in developing emergency operations centers like those already established in India, Uganda, and Vietnam, where the Ministries of Health and their partners can communicate and collaborate during an emergency response, such as a disease outbreak or natural disaster;

- Replicating the successes of the two GHS demonstration projects in 2013 – partnerships between CDC and Vietnam as well as CDC and Uganda helped develop real-time information systems for faster outbreak response and improved emergency operations procedures, including safe packaging and transport of potentially infectious samples; and

- Tracking and measuring progress using a series of metrics and inviting partner countries to use the metrics that are appropriate for their situations.

Raphael M. Barishansky (pictured), MPH, MS, CPM is director of the Connecticut Department of Public Health's Office of Emergency Medical Services (OEMS). Prior to establishing himself in this position, he served as chief of public health emergency preparedness for the Prince George's County (Maryland) Health Department. A frequent contributor to the DomPrep Journal and other publications, he can be reached at rbarishansky@gmail.com.

Audrey Mazurek is the managing director at TSG Strategies, LLC, providing public health emergency preparedness and homeland security consulting for federal and local government agencies. Prior to this position, she served as a technical specialist at ICF International (primarily as a public health preparedness planner for the Prince George's County and Montgomery County (Maryland) Health Departments), an analyst at the Homeland Security Studies and Analysis Institute (HSSAI), and program manager at the National Association of County and City Health Officials (NACCHO). She can be reached at amazurek@tsgstrategies.com.

International Public Health Concerns – Not So Foreign

By Robert C. Hutchinson, Public Health

Public health policy articles published in the [November 2013](#) and [March 2014](#) issues of the *DomPrep Journal* examined emerging and evolving pathogenic threats around the world to evaluate U.S. preparedness levels for serious novel illnesses. These public health concerns continue to expand and highlight the consistent and diverse threats that are only a short flight away within a globalized economy. Sooner than many expected, the Centers for Disease Control and Prevention ([CDC](#)) reported that the first case of the Middle East Respiratory Syndrome (MERS) virus arrived in the United States on 2 May 2014 via commercial air travel within the body of a healthcare worker travelling from Saudi Arabia. A hospital in Florida diagnosed the [second case of MERS](#) on 9 May 2014 in another healthcare worker from Saudi Arabia who was visiting relatives in the United States. The immediate effect of the MERS arrival reportedly has been minor and well addressed by medical and public health professionals, thus providing another significant opportunity to evaluate the nation's plans and capabilities.

> *"If MERS or Lassa fever arrived in a mutated strain with sustained person-to-person transmission or within a SARS-like human superspreader, the nation's plans and true preparedness would be significantly tested – possibly to failure."*

Emerging Threats & Growing Drug Resistance

On 3 April 2014, the CDC and the Minnesota Department of Health confirmed a diagnosis of another foreign pathogen – [Lassa fever](#) – in a person returning to the United States from western Africa. Although it is not the first domestic occurrence of the virus, Lassa fever has been rare in the United States. As with many other pathogenic concerns such as MERS, Lassa fever emerged in a very short time period via international commercial air travel. The diagnosis of both MERS and Lassa fever required the identification of common travelers and associates to determine any further exposure and possible spread of the illnesses. In the aviation environment, exposure possibilities could be exponential due to the length of flights and number of interconnected passengers throughout the world.

Domestic public health concerns include more than emerging viral threats, but also parasites that are often considered public health concerns in developing nations. The CDC has targeted five neglected parasitic infections in the United States because of the severity of the illnesses, the number of people affected, and the nation's ability to prevent and treat these infections. According to a [CDC press release on 8 May 2014](#), "the [neglected parasitic infections] in the United States are part of the global burden of parasitic diseases, and strategies that reduce or eliminate them in the United States can someday be applied globally."

These microbial arrivals and occurrences merit even greater observation and consideration as reports of [antiviral](#) and [antibiotic](#) resistance increasing throughout the world – especially in the developing world – continue. The ability to purchase antibiotics without prescriptions in many nations provides easy access for a large number of people to find an immediate benefit, but with potential consequences later. The frequent prescription of antibiotics in developed nations for viral infections also is not helpful by expanding this resistance. Unfortunately, an unintended consequence of such easy access, as well as the frequent and repeated exposure to these lifesaving pharmaceuticals, is an accelerated microbe resistance.

Strategic National Guidance

These most recent developments have again initiated policy and planning questions regarding realistic preparedness for biological threats, which includes naturally occurring pathogens. All-hazards strategies and plans, with a focus on this subject matter, continue to drive planning and preparedness. President George W. Bush issued Homeland Security Presidential Directive 21 ([HSPD-21](#)), entitled "Public Health and Medical Preparedness," in 2007 to update the national strategy. Issued after the more pandemic influenza-focused National Strategy for Pandemic Influenza ([2005](#)), National

Strategy for Pandemic Influenza – Implementation Plan (2006), and HHS (U.S. Department of Health and Human Services) Pandemic Influenza Plan (2005), HSPD-21 was intended to protect the health of U.S. citizens against all disasters. This directive provides high-level guidance for biosurveillance, medical countermeasures, and other topics relevant to current emerging pathogenic threats. The document also is useful for understanding and measuring expectations and responsibilities in order to develop or enhance organizational strategies, policies, and plans.

Under President Barack Obama's administration, Presidential Policy Directive-2, entitled "Implementation of the National Strategy for Countering Biological Threats" (2009), is another important high-level strategic directive for reference and review. The president's National Strategy for Countering Biological Threats (2009) is a broad strategy for addressing the vast world of biological threats in conjunction with other associated national strategies and plans. Included in the strategy is the rapid detection and containment of serious infectious disease outbreaks and the improvement of international capacity against communicable diseases to better prepare national capabilities.

The first-ever National Strategy for Biosurveillance (2012) builds on the previous strategies, plans, and capabilities to identify and understand threats as soon as possible, including the spread of infectious diseases. This strategy identifies the following four enablers for strengthening biosurveillance relative to the current emerging and evolving pathogens:

- *Integrate Capabilities* – Emphasize efforts to transcend regular boundaries and extend across traditional organizational lines;

- *Build Capacity* – Integrate fusion centers, law enforcement, intelligence, and other information and collection activities;

- *Foster Innovation* – Encourage new thinking and develop revised methodologies aimed at forecasting outbreak trajectories in the absence of definitive data; and

- *Strengthen Partnerships* – Develop connections through collaborative international biosurveillance activities that will accelerate operational response to domestic and international incidents.

As re-enforced in the recently released (18 June) 2014 Quadrennial Homeland Security Review, "Of the naturally occurring events, a devastating pandemic remains the highest homeland security risk."

Globalization & Preparedness

The National Strategy for Biosurveillance concludes that protecting the health and safety of the people in the United States through a well-integrated national biosurveillance enterprise is a top national security priority. The challenge is to confirm that this top strategic priority has effectively cascaded down through all levels of the public and private sectors to meet the ever-changing threats of today and tomorrow. If MERS or Lassa fever arrived in a mutated strain with sustained person-to-person transmission or within a SARS-like (severe acute respiratory syndrome) human superspreader, the nation's plans and true preparedness would be significantly tested – possibly to failure.

Through the globalization of trade and travel, pathogenic threats that appear foreign based on knowledge, experience, or physical distance may be much closer than many would think. It is important to appreciate these currently manageable reminders of MERS and Lassa fever before the arrival of a more serious pandemic microbe or an unthinkable hemorrhagic fever such as Ebola or Marburg. These public health threats may appear quite remote and distant, but so did MERS and Lassa fever to many practitioners and policymakers several months ago. A significant and overwhelming public health threat may be just a short flight or bus ride away.

The opinions expressed herein are solely those of the author in his individual capacity, and do not necessarily represent the views of his agency, department or the United States government.

Robert C. Hutchinson is a supervisory special agent (SSA) with the U.S. Department of Homeland Security, U.S. Immigration and Customs Enforcement's Homeland Security Investigations. He was previously the deputy director and acting director for the agency's national emergency preparedness division. He has lectured internationally on this subject and advised national representatives from the Middle East and Central Asia regarding policy development. He earned his graduate degrees from the University of Delaware in public administration and Naval Postgraduate School in homeland security studies.

Special Facilities – More Than Just Shelters

By Joseph Cahill, Emergency Management

Many emergency plans call for the establishment of special facilities – each serving a primary function(s) to protect the population – in order to fulfill the public's needs during or after a disaster. Following a terrorist attack involving a bioweapon such as smallpox, for example, mass inoculations would require establishing one or more points of distribution (PODs). When setting up an emergency public facility, emergency managers must make quick decisions that have cascading effects.

The first step in setting up facilities is to define each facility's primary function(s), which in turn dictates the potential number of people and the length of time they are likely to use the facility. This information then helps emergency managers determine which support services the facility will need to provide, with the understanding that the longer people remain in the facility, the more services they may require.

For a bioattack, the facility should include an area where staff can vaccinate entire families as well as interview family members, while maintaining confidentiality, to collect information about contact they may have had with other people. Since the scope of this example is simply to provide vaccinations and gather information, the facility's function would be relatively short-term.

Transportation, Security & Other Specific Services

Whether planning for a short-term or long-term facility, transportation to and from facilities is an important consideration. In cases where families or individuals drive to a facility, there is a need for parking spaces. In other circumstances, such as a tornado incident, the survivors may have lost their vehicles and, therefore, require transportation to a shelter or other public service facility.

> *There is no "one-size-fits-all" when establishing an emergency facility. Emergency managers must consider many factors to determine which services the facility will need to provide.*

Maintaining order and safety within and around facilities, particularly during times of crisis and stress, are critical. It is important to maintain a perimeter to keep out those who do not belong in the facility, which may include the media, and allow entry to those who require facility services.

Before staff members officially admit or process people arriving at the facility, there must be a process for members of the public to follow as they wait for services. Facilities such as PODs, where the public is not likely to spend much time, may benefit from a queue line rather than a large waiting area. In contrast, facilities where the process takes many steps – for example, when forensically identifying remains from a mass fatality – a waiting area may be more appropriate. The decision to use a waiting area or a queue also may depend on the facility's physical location and floor plan.

The longer people are onsite, the more services – such as food, lodging, childcare, and medical support – the facility must provide. Although bathrooms must be available for any public facility, the length of time for facility operations would affect the quantity of bathrooms needed.

Even in cases where any of these services may not seem necessary for the people that the facility serves, they are necessary for staff members who are working there. Emergency managers establish these facilities for specific tasks, but losing sight of the fact that people who have additional "off-task" needs are performing these tasks may lead to failure.

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.

Building & Maintaining a Strong Disaster Volunteer Force

By Harlan Dolgin, Private Sector

Before the tragic events of 9/11, most jurisdictions across the United States were responsible for their own local volunteer management. After 9/11, the federal government recognized the need for a national program for recruiting and credentialing volunteers, which could shorten the response times immediately following a disaster. In 2002, the concept of the Medical Reserve Corps (MRC), among many other disaster volunteer response groups, was born.

Past & Future Disaster Applications

Local volunteers play a very important role in responding to public health disasters. Whether through a local chapter of the MRC, which also includes many volunteers other than medical personnel, or through another local organization, volunteers can help with responses to pandemics, bioterrorism incidents, hurricanes, tornados, or other events that put the public at risk.

For example, following Gulf Coast hurricanes Katrina and Rita, MRC volunteers in Dallas County, Texas, partnered with the American Red Cross (ARC) to provide medical assistance to people who evacuated their homes in the Gulf Coast region to the Dallas area. ARC opened shelters for evacuees, and the MRC volunteers treated people at the shelters who needed medical attention – including both physical and psychological needs – during these traumatic hurricanes. In another example, in Saint Louis County, Missouri – as in many other communities – the MRC was activated by the Saint Louis County Department of Health during the 2009 H1N1 pandemic to assist in opening temporary clinics that provided the new influenza vaccinations.

Local communities require significant assistance in preparing for bioterrorism attacks. The Centers for Disease Control and Prevention (CDC) charge health departments across the country with distributing medication to all of their community residents within 48 hours of a declared bioterrorism event, such as an anthrax release. These temporary clinics are called open points of dispensing (open PODs, also called public PODs), which are open to the general public.

The potential for a dangerous bioagent to be released into a community was amplified in June 2014 when the CDC reported that as many as 86 people were exposed to anthrax at a highly secured CDC laboratory. Although all of the potentially exposed CDC employees received antibiotics as soon as the incident was discovered, it will take about two months to determine if any of them suffered significant illness because of the exposure. Anthrax releases also were reported in 2001 in the United States (just weeks after 9/11) and in 1979 in Sverdlovsk, Russia, when an air filter was removed and not replaced immediately, causing approximately 100 deaths in a village downwind of the anthrax factory.

If a widespread incident similar to the one in Russia (or worse) were to occur in a modern community, health departments do not have sufficient staff to meet the CDC's 48-hour requirement. They would need to rely on a large volunteer base to help save lives within their communities.

Establishing a Volunteer Base

Getting dedicated volunteers is not difficult when looking in the right places. Anyone can join an MRC, as units need as many nonmedical volunteers as they do medical volunteers to do various jobs. Volunteers may contact their local health department to sign up, or locate a local MRC at www.medicalreservecorps.gov. Large organizations can order materials from their

local health department to publicize the MRC in break rooms and on bulletin boards.

Medical and nursing schools have an abundance of eager students that would make great volunteers. Their medical training and the fact that they will be licensed at some point in the future are bonuses. From a recruiting standpoint, approaching local medical/nursing schools to make a 30- to 45-minute presentation about the MRC to students and actively soliciting students to volunteer can have a surprising success rate, in some cases as much as 30 to 50 percent of the participants. Part of the attraction is that students can add the MRC training and participation on their resumes, which may help them get jobs when they graduate.

Once volunteers have registered, they also need to be motivated to stay with the program. Training and exercises must be scheduled to ensure they remain with the program and get value out of the volunteer experience. Dallas County Health and Human Services holds trainings almost weekly throughout the year, in an effort to keep the volunteers engaged and well-trained should the need arise to activate its members.

A mix of full-scale, functional, and notification exercises (i.e., call down to all POD volunteers to ensure the ability to reach them during a real disaster) should be coordinated at least annually. The city of Independence, Missouri, used its MRC volunteers in April 2013 to hold a drive-through POD exercise to distribute medication to "patients" (members of the public) in a simulated response to a bioterrorism event. Numerous communities across the country have performed similar exercises. Members of the MRC – whether coordinating units or volunteering to train for the next activation – serve an important community preparedness function.

Harlan Dolgin, JD, has been a certified business continuity professional (CBCP) since 2003, with more than 15 years' experience in the areas of business continuity, disaster recovery, emergency management and pandemic preparedness. He is currently the co-owner of the Bio-Defense Network, a firm specializing in bioterrorism preparedness. He also is an adjunct assistant professor of community health at Saint Louis University in Missouri. In 2006, he became the founder and co-chair of PandemicPrep. Org, a nonprofit organization preparing the Saint Louis region for the next pandemic. He has maintained his law license with the State of Missouri since 1986.

Revisiting the Staging Area Manager

By Robert Mueck, Law Enforcement

 In the initial response phase of an incident, the goal of first responders is to arrive quickly and safely at the scene. This phase is fluid as responders determine exactly what is occurring and law enforcement officers take quick action to render the scene safe. Command during this phase is primarily at the field level, starting with the first responding officer and eventually transferring to the shift supervisor. The emphasis is on life safety by minimizing the effects of the emergency and containing the incident.

Operationally, the initial command post is likely to be the vehicle of the shift supervisor. For large-scale incidents, other commanders often will join and form a unified command, necessitating a move to a formal command vehicle or into a building.

With the criticality of life safety in mind, there is a lot to think about during an active shooter or other law enforcement incident. Incident commanders must consider jurisdictional issues: securing ingress and egress to the scene; identifying the hot zone; establishing perimeters around the hot zone as well as the entire incident; and gathering valuable information about the incident. Complex incidents require emergency communications, not just among the responders but also to the communities. Social media has introduced a new dimension to public safety in such cases.

Convergence of Responders & Tracking Issues

Comprehensive management is required from the onset, as the response to an incident often escalates quickly. Keeping track of officers "going in" is much easier than keeping track of everything else, such as other law enforcement officers who self-dispatch to the incident, and teams of non-law enforcement emergency response personnel who arrive on the scene.

Chief Cathy Lanier of the Washington, D.C., Metropolitan Police Department identified in a March 2014 Police Executive Research Forum report,

entitled "Critical Issues in Policing Series: The Police Response to Active Shooter Incidents," that, "Not all responding agencies reported to incident command," during the September 2013 shooting at the Washington Navy Yard. Having officers report to the designated staging area(s) helps with this issue.

Keeping track of equipment, supplies, and other resources can become challenging. It is critical to properly manage these resources to enable their efficient and effective use in a controlled environment. Tracking resources, which includes people, is also important for purposes of accountability. When the incident ends, it becomes the "world's biggest crime" scene and criminal charges may be levied. Not knowing who was on the scene complicates the investigation. The better the accountability at the front end of the incident, the easier it is on the back end of the incident.

For the Washington Navy Yard shooting, Chief Lanier also identified issues related to tracking resources and demobilizing incident responders. She stated in the 2014 Forum report that a variety of factors contributed to the difficulty in tracking and managing the orderly and efficient demobilization of all personnel and resources.

When a call goes out for a possible active shooter, "everyone" is coming: on-duty personnel dispatched to the scene; responders from jurisdictions around the region; off-duty personnel; and those who happen to be in the area. Officers from all agencies understand the need to get to the scene and stop the carnage. Although they are coming for the right reasons and with the best of intentions, their response presents another challenge for the incident commander, who must manage the incident as well as the influx of non-dispatched responders.

Chief William McMahon of the Howard County Police in Maryland led the response for the January 2014 Columbia Mall shooting. In the 2014 Forum report, he described seeing "waves of people in uniform coming onto the scene." He added, "So I grabbed a sergeant and said, 'You need to get a handle on all of those people for me'." McMahon quickly recognized that, "A lot of people will respond, so you need to manage them. It would be good to have an understanding that officers

Wildland firefighting apparatus are staged at the Prado Staging Area in 2008. This is routine in fire and emergency medical services.

(Photo by FEMA/Casey Deshong - Nov. 19, 2008)

who self-dispatch to the scene will go to a staging area and wait to be assigned a role, rather than having people just do what they think needs to be done."

Staging Area Basics

There often are too few responders initially, and then soon there are too many – possibly more than needed for the incident. Knowing that there is a call for help, they come; however, unlike colleagues in the fire service, law enforcement agencies currently do not do a good job managing (human) resources. There is much room for improvement. It is time to revisit the idea of the staging area and the use of staging area managers.

Simply put, the staging area is where resources (people, vehicles, and equipment) await tactical assignments. There may be more than one staging area for an incident, but anything in staging is always ready and in an "available" status. The staging area is always outside of the inner perimeter (away from the hot zone), but inside the outer secured perimeter. It can be co-located with the incident command post, but this is determined on a case-by-case basis.

The staging area offers a location where officers check in for duty. In the initial response, officers must respond directly to the scene. However, if not the patrol officer or deputy that is dispatched to the scene, officers need to report to the staging area. In fact, "other" responding officers should ask where the staging area is located. If the incident commander has not established one yet, the request may be the prompt he or she needs to set one up.

Staging areas are not unique to law enforcement. Fire departments and emergency medical services (EMS) do this on a routine basis. The staging area is a concept taken from the Incident Command System (ICS) and fire/EMS stages on a regular basis when called to an incident of any kind. Even public utilities use staging areas when they prepare for major storms and the expected impact on their infrastructure.

When resources are no longer needed, officers do not return to the staging area. Once dismissed from the incident, perhaps because they need to rest and return later, they are no longer "available" and do not belong in the staging area.

The staging area manager (SAM) is a key component of incident command. This person reports directly to the command post – to the incident commander, unified command, or operations section chief. The SAM keeps the incident command post abreast of resources available and the capabilities that these resources bring to the incident. The SAM also provides security for the staging area, though this may require more people if the incident covers a large area. At an active shooter workshop in Baltimore, Maryland, on 7 March 2014, Capt. John McKissick, Howard County Police commander of the Special Operations Bureau, stated that what they were really missing at the Columbia Mall shooting was a good staging area and someone to manage it.

Requirements & Responsibilities
Of a Staging Area Manager

Since anyone may be a designated SAM, everyone should know what this function requires. The first step is to proceed to the designated staging area and establish the layout. Vehicles should be parked in configurations that allow them to respond quickly to the incident. The general rule is "first in, first out."

The SAM needs to track who and what is in the staging area; ICS forms already exist for this purpose. Forms such as ICS Form 211 (Incident Check-In List) and ICS Form 218 (Support Vehicle/Equipment Inventory) are downloadable for this purpose, or individual agencies may develop their own forms. If forms are not available, a pad of paper is sufficient for writing down the information. Perhaps there will come a time when first

responders have a credential with their training, skills, and equipment embedded in them that SAMs could easily scan and transmit wirelessly to the command post for this purpose. Until then, paper forms and existing technology will have to work.

SAMs need to maintain the staging area in an orderly fashion to ensure enough space for vehicles to maneuver and avoid blocking other vehicles. Vehicles should face in the same direction, which is usually toward the incident. By positioning vehicles and apparatus in such a way, when deployed, officers can simply drive forward in the proper direction when deployed. Officers should consider leaving a key with the SAM if they leave the staging area on foot. This allows the SAM or a designee to move vehicles as situations dictate.

Areas used for staging can be large parking lots at malls or shopping centers. If parking areas are not available, another option may be to close a roadway to establish the staging area. This may require more personnel to control traffic around or away from the staging area, but the incident is the bigger issue and the roadway may be the only choice.

There also may be other issues to contend with on occasion. Parking lots may be full with vehicles, snow, or snow piles after plowing. Crowds of people who self-evacuate an incident may be milling around the staging area – usually indicating the need for more personnel onsite to deal with the situation and gather intelligence from these people about the incident itself. Construction may be an issue as well, or the initial responders' vehicles may be in the way. When dealing with any of these issues, it may be necessary to reconsider the location as a staging area.

Secondary Explosive Devices

There is another matter that needs to be taken into consideration as well, and that is the possibility of improvised explosive devices (IEDs). Although not new, their prevalence requires careful consideration when setting up a staging area.

Eric Robert Rudolph was famous for his bombing of Centennial Olympic Park at the 1996 Olympics in Atlanta, Georgia, as well as the bombing of abortion clinics and a nightclub in 1997. On 16 January 1997, he

bombed an office building in Atlanta, Georgia, because it contained a family planning service. The 1997 attack involved two bomb blasts an hour apart from each other. The first blast was directed at the clinic in the building, but the second device went off in a parking lot with the intent to kill or injure first responders. The bomb injured four people, and more than 50 others suffered from blast effects. In another bombing a month later, Rudolph's secondary device was located before it could cause injuries.

The Columbine High School shootings on 20 April 1999 were actually supposed to be a bombing followed by a shooting. The two attackers were, thankfully, not very adept at their bomb-making skills and the majority of their devices did not work. However, they too left IEDs in their vehicles in the parking lot of the school, with the possible intent of increasing the fatalities by targeting first responders.

At the Columbia Mall shooting in Howard County, Maryland, the shooter had IEDs in his backpack. Although they were not used in the incident, their discovery presented a new question: Did he leave any in the parking lot to target first responders? He did not but, until that was determined, it had to be considered.

Given these incidents, it is important to include possible secondary attacks in the thought process. When establishing a staging area, officers need to strongly consider the possibility of IEDs. Securing the staging area, therefore, takes on a new meaning and cannot be taken for granted.

Standardizing the Staging Area Concept

A personal discussion on 10 March 2013 with Chief William Corrigan of the College Park Volunteer Fire Department in Prince Georges County, Maryland, provided a better understanding of how the local fire department handles its staging area. Protocols of the Prince Georges County Fire Department set two levels of staging. In Level I staging, fire units respond to the incident, set up preparations for fire operations, and stand by for instructions. In Level II staging, fire units stage away from the scene and prepare to deploy when called. Similarly, the Special Operations Division of the Prince Georges County Police Department establishes a safety zone where their

tactical resources stage close to the incident for tactical operations and are co-located at the command post. All of these are standardized and performed on a regular basis. This concept of staging should be the norm for general law enforcement.

One thing Corrigan recommended was setting up staging in an area that eliminates, or reduces, the need for incoming units to respond past the actual incident scene. Strategically locating the staging area will minimize the potential and temptation for incoming units to bypass staging and freelance their way into the incident scene.

In summary, law enforcement officers that have not been sent to the scene should check in at the staging area and contact the SAM. Communications between the staging area and the command post are vital, and the SAM is important for providing incident commanders situational awareness of the resources at their disposal. Incident commanders also must remember the importance of establishing a staging area and getting the word out to potential responders where they should report.

This staging process, if conducted properly, would prevent some of the convergence to the incident scene and help in the controlled delivery of assets during the response. Lastly, SAMs need to ensure the security of the staging area, and consider the possibility of IEDs. Officers responding to an incident should consider where to deploy at an incident, so they can begin the process of developing a staging area.

Robert "Bob" Mueck recently retired after a 29-year career at the University of Maryland Police Department (UMPD), having served in a variety of capacities in operations, administration, and command positions. He currently serves as: an active member of the Governors Workgroup on Active Assailant Response in Maryland; an adjunct faculty member at University of Maryland University College, where he teaches homeland security in the undergraduate Public Safety Leadership program; an adjunct faculty member for the Texas A&M Engineering Extension Service (TEEX); the training coordinator at the George Washington University in Washington, D.C., for the University Police and the Consortium of Universities of the Washington Metropolitan Area; and a sector chair for the Maryland Chapter of Infragard.