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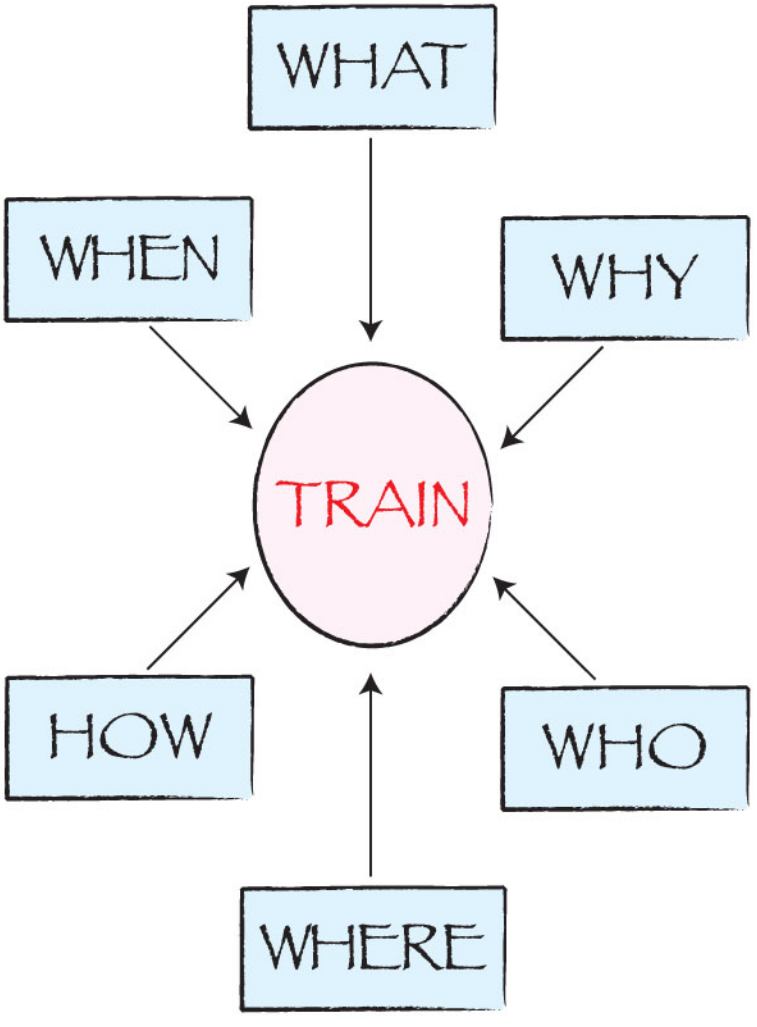
What If...

Training for the Worst-Case Scenario



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Editor's Notes

By James D. Hessman, Editor in Chief

COBRA and Zombies, trench rescues and text messages, dirty bombs and Murphy's Law – and a long list of other important topics – are among the numerous subjects covered by the 11 distinguished authors contributing to this month's issue of DPJ.

The principal focus throughout, though, is on training and exercises. Both of which take meticulous planning, weeks or sometimes months of preparation, the judicious expenditure of increasingly scarce financial resources, and the careful study of after-action reports and, of at least equal importance, the incorporation of lessons learned in future drills and exercises.

Richard Schoeberl leads off with a comprehensive overview of the ABCs of TTEs (tabletop exercises) and FSEs (full-scale exercises) and how both fit into what might be called the national training curriculum that has been developed, refined, and re-calibrated in the ten years since the terrorist attacks that both shook and shocked the nation out of its pre-9/11 complacency. Preparation is "paramount," Schoeberl comments, there is "no place" for complacency, and there is a long and treacherous list of "What Ifs" that must be addressed before, if ever, the American people will again feel reasonably secure.

Corey Ranslem provides an insider's look at one of those "What If" scenarios – a major incident in a U.S. port (one of the most likely targets of terrorist groups). Craig DeAtley analyzes another immensely complicated situation: the handling of a potential mass-casualty situation in or close to a crowded hospital or other healthcare facility.

Shannon Arledge and Terrence Cloonan then discuss (in separate articles) the worst-case scenarios now facing the United States and its allies – the use of CBRNE (chemical, biological, radiological, nuclear, explosives) weapons against major U.S. cities – and spell out how the Center for Domestic Preparedness (CDP) in Anniston, Alabama, is training emergency responders from every state in the union: how to cope with such attacks; and how to use their equipment. One telling clue on the high priority given to such training: The original goal was to train 10,000 responders per year; an estimated 80,000 or so have been trained at CDP this year alone, though, and the overall 2011 total is likely to be well over 100,000.

Also in this printable issue are four special reports by: (a) Stephen Grainer, on the importance of including the often-neglected ICS (Incident Command System) training in the national curriculum; (b) Joseph Cahill, on how the ever resourceful CDC (Centers for Disease Control and Prevention) is using the apocalyptic zombies mentioned above to get its message across to the younger, tech-savvy generation; (c) Robert Stellman and James Matheson, on several steps that the United Kingdom is taking to include disaster training in the upper levels of its educational system; and (d) JL Smither, on the combined efforts of 7 federal, 19 state, and 23 local agencies to prevent the spread of gastrointestinal anthrax.

As always, Adam McLaughlin tops off the issue with timely reports on the improving "state of readiness" in: Michigan, working with Canada on a new "Virtual City" program to prevent the import into the United States of a broad spectrum of hazardous materials; New York, testing a new radiation detection system in lower Manhattan to thwart a possible "dirty bomb" attack; North Carolina, now using text messaging to speed up its disaster alerts; and Wisconsin, evaluating a new patient-tracking system to keep the families of disaster victims quickly and fully informed.

About the Cover: The goal is clear: improved homeland security across the board, in every state in the union. But time is short, there are a seemingly endless number of "What Ifs" involved, and no clear and easy way to get from here to there. There also are a few elementary questions involved – none of them are easy to answer, and very few if any are low in cost. (Cover design by Susan Collins)

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Answering the "What Ifs" With Real-Life Training

By Richard Schoeberl, Law Enforcement

As emergency management professionals in London train and prepare for the upcoming 2012 Olympic Games, police are presently falling short in mitigation efforts to combat large-scale rioting throughout the United Kingdom. At the same time, Norway is dealing with mass casualties from a so-called "lone wolf" terrorist attack, spurring that nation to evaluate the reaction and be better prepared for a similar situation in the future. The quintessential message is: The world is filled with good guys and with bad guys. The time has passed for the world to understand the unpredictable state of day-to-day threats. It is now time for the world to be prepared to mitigate the crisis when and where it actually happens.

The looming threat of a terrorist attack on U.S. soil (or against U.S. forces overseas) highlights the importance of effective planning efforts in responding to crisis situations. Whether the anomaly of the recent act of terrorism in Norway or staying ever vigilant against the threat posed by al Qaeda, preparation is paramount and complacency has no place in emergency management. Emergencies and crisis situations similar to those of the past are inevitable, and for that reason public and private organizations must plan and jointly train to be successful when combating these evolving threats. Many if not all organizations are, in fact, continuing to prepare for that untimely day an attack will occur – but relatively few of them incorporate enough "real-life" exercises that integrate all responding agencies and other affected resources.

Emergency exercises are designed as a practical response to the growing threat of a terrorist attack, a natural disaster, or other large-scale emergency. They are, therefore, or should be, a core component of the preparedness component of emergency management, and an effective exercise program impacts each phase of the emergency management cycle. Agencies conducting diverse emergency exercises increase their own prevention, preparedness, response, and recovery capabilities. These caveats can be fine-tuned through workshops and seminars, tabletop exercises, and functional exercises – but most effectively through full-scale exercises.

TTEs & FSEs: The "Real-Life" Differences

In the wake of several attacks and attempted attacks, it becomes necessary at some point to test an agency's capability. The most common methods of testing are through the use of various mitigation and preparation exercise programs, including both tabletop exercises (TTEs) and full-scale exercises (FSEs). Most TTEs and FSEs are crafted to address policy as well as strategic issues. Both types of exercises test prevention and response systems and also: (a) require participants to make difficult decisions and carry out essential functions; and (b) challenge their capabilities to maintain a common operating picture during a significant incident.

TTEs are usually more sanitized, typically performed in a classroom-type setting or simulated command post, and assist in facilitating a scenario. Unfortunately, they

all too often lack the full integration that more accurately simulates the presence of a real-life situation. Unfortunately, because a typical TTE is a facilitated group analysis of an emergency situation, in an informal and stress-free environment, participants may feel that they are sometimes "just going through the motions." The TTE is particularly well designed for an examination of operational plans, problem identification, and in-depth problem solving, but without the actual deployment of resources. In addition, it provides an opportunity for key agencies to become familiar with one another, along with their interconnected roles and unique duties and responsibilities.

In contrast, an FSE is performed in the field, under simulated conditions but as close to "real life" as is physically possible, forcing participants to take the exercise more seriously. The FSE is designed to create a high level of stress, with the desired multi-agency approach, and involving an "actual" deployment of resources in order to fully evaluate the situation – as if it is actually happening in a real-life incident. In an FSE, incorporating both operational and tactical considerations into the exercise is imperative in order to include and evaluate tactics, technical aspects, and procedures that would be deployed to cope with a real-life threat.

Vulnerabilities, Prevention-Mitigation And a Three-Phase Task Sequence

Having a well-balanced program, and coupling TTE with FSE, can create a valuable tool for emergency management executives – and should not be overly difficult. TTE and FSE go hand-in-hand by nature and the differing aspects of their training should be routinely conducted in an effort to develop a more cohesive and proactive approach to an actual crisis event. Such exercises are particularly valuable in pointing out vulnerabilities that management will have to address in the prevention-mitigation phase of response operations. In addition, such training allows participating agencies to practice a response that can help ensure a desired, measured, and efficient outcome to an actual crisis. Moreover, the FSE demonstrates exactly what resources may be required during the recovery phase of those same operations.

Through the use and implementation of FSEs, agencies can also better assess, organize, and diminish lapses in emergency management plans by addressing any shortcomings detected in the exercise. Agencies that develop a highly structured FSE also will be better equipped to evaluate operational plans and response systems already in place, while examining inter-jurisdictional relationships in greater detail.

Whether agencies follow the guidelines established in the U.S. National Incident Management System (NIMS) or a modified version, several factors must be considered in the onset when developing and building an emergency exercise program involving both FSEs and TTEs – the cost of the program, for example, and how it fits into the annual budget. Among the other important factors to be considered are: (a) defining the capabilities of the agencies participating; and (b) the setting of realistic goals for the entire organization.

Not all scenarios or "blanket scenarios" will work in every setting, of course. In the development of the program, therefore, both a short-term plan and a long-term plan should be established. After the agencies participating have crafted an acceptable plan, therefore, and that plan is approved, the process of staging the exercise for the organization should include a sequence of tasks that will transpire in three phases: (a) before the exercise; (b) during the exercise; and (c) after the exercise.

A Joint Approach Fosters Improved Relationships

Although TTEs and FSEs are important to first responders, they can also be used as a means to prepare communities, agencies, and facilities for both natural and manmade disasters. Integrating the federal, state, and local levels of government allows all parties of interest to gain a better understanding of overall response capabilities and the incident's possible effect on the community. A key aspect of an emergency exercise program is the fact that it fosters relationships within the critical-incident response phase that might otherwise not be present. As in a real-world response, agencies and organizations position resources into the field and face realistic incident-specific challenges, including the allocation of limited response resources and the exercise actions needed to effectively manage unforeseen conditions and circumstances as and when they develop.

Planning and preparation for the exercise also help strengthen working relationships between the departments and agencies critical to successful prevention and response in real emergencies. Exercises are designed not only to create an understanding of deficiencies and response capabilities, but also – perhaps even more so – as a way to foster better working relationships between emergency management agencies'

response components and governing authorities. This in turn will create a greater opportunity for agencies to understand the risks involved in their specific facilities, to identify planning deficiencies, and to test emergency management personnel systems not only for known strengths but also for areas that need improvement.

Authorities should for that reason create a realistic scenario that challenges the partner agencies to respond to a crisis incident in order to test their objectives and to determine agency capabilities and reactions should such an incident actually occur. Crisis management exercises should also, when feasible, include both international and domestic scenarios and therefore provide for the inclusion of foreign governments.

For example, an emergency exercise involving a terrorist incident should be broken down to meet several specific components, including: (a) the actual prevention and deterrence of the terrorist threat; (b) the deployment of resources that actually would respond to the terrorist incident; and (c) management of the probable and foreseeable consequences following the incident. The crisis management aspect also should include a major effort to provide: medical treatment and emergency services; decontamination services, if and when needed; the evacuation of victims and/or innocent onlookers from the scene of the incident; and the restoration of any services disrupted during the attack. Therefore, when an incident such as a terrorist attack does occur, often without warning, both crisis management and consequence management would immediately become fluid activities.

No-Notice Exercises, Murphy's Law, And the "What If" Complications

There is considerable debate, understandably, among government agency executives regarding "no-notice exercises." Although it is important to see how quickly federal, state, and local agencies can respond, such exercises tend to be much broader in scope than pre-planned exercises and can be disruptive to the normal day-to-day operations and responsibilities of the agencies directly involved.

Emergency exercises should be led by a single agency – which would be responsible for planning the exercise, setting the objectives, scripting the scenario, coordinating the logistics, and evaluating the results. Logically, therefore, the lead agency almost always provides the bulk of the resources and personnel needed to coordinate the exercise. After-action reviews capture key lessons learned from all of the emergency responders involved, and make recommendations for improvements. The most important components of after-action reviews include the following: (a) An overview of the exercise and the emergency activities carried out; (b) An assessment of exercise goals and objectives; (c) An analysis of the outcomes and capacities needed to perform critical tasks; (d) The development of recommendations for improvement – including the specific improvements for each partner agency involved; and (e) The creation of an accountability plan for follow-up evaluations.

As in other real-life events, "Murphy's Law" will likely play a role in training exercises as well. When planning exercises, each component should be spelled out in the contingency plans. It is not uncommon for communication systems to be disrupted and information technology (IT) components to fail. Building in contingency plans to engage the "what ifs" will assist with response efforts when those what ifs occur in real-life situations.

There are clear benefits for conducting such exercises on a routine basis. Agencies will develop a greater consistency of response, a more proficient use of resources, and an increased confidence in staff – while building a stronger relationship with key partners in emergency management. A valuable exercise program will include both TTEs and FSEs and should be prepared to incorporate progressively multifaceted exercises, with each exercise building on the previous one, until they are as similar to real-life scenarios as is humanly possible. Furthermore, the exercise, whether FSE or TTE, should cast a wide net to encompass various organizations such as fire and police departments, emergency management, local public health, public safety, the Red Cross, and others as needed. Finally, all exercises should be both cautiously and comprehensively planned, with a clear end goal in mind.

Richard Schoeberl has over 15 years of counterintelligence, terrorism, and security management experience, most of it developed during his career with the Federal Bureau of Investigation (FBI), where his duties ranged from service as a field agent to leadership responsibilities in executive positions both at FBI Headquarters and at the National Counterterrorism Center. During most of his FBI career he served in the Bureau's Counterterrorism Division, providing oversight to the FBI's international counterterrorism effort. Schoeberl also was assigned a number of collateral duties – serving, for example, as an FBI Certified Instructor and as a member of the FBI 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.

Training, Exercises, and the ICS: A Natural Fit

By Stephen Grainer, Fire/HazMat

The National Incident Management System (NIMS) established a training standard stipulating that emergency responder personnel must be trained to certain levels in the U.S. government's incident command system (ICS). The required levels are generally related to the responders' degree of responsibility during emergency incidents – i.e., the greater the responsibility, the greater depth of ICS training required. Most emergency response organizations have adopted and adapted to the general standards since those criteria were published. In fact, many states, cities, and agencies have implemented ongoing annual schedules or calendars: (a) to provide training for personnel whose responsibilities change; and (b) to provide adequate training to new employees who are replacing those who resign, retire, transfer, or for various other reasons are no longer on the job.

Since 2008, many of the organizations providing ICS training have come to recognize a new challenge – i.e., finding a way to maintain the core competencies and skills associated with the ICS training provided in the past. While continuing to provide the standard training courses – Introduction to ICS (ICS-100), Basic ICS (ICS-200), Intermediate ICS (ICS-300), and Advanced ICS (ICS-400) – those organizations have discovered that at least some personnel could not effectively recall or perform the objectives of their previously completed training. Usually, the original knowledge base had atrophied – often, it seemed, because of the lack of application.

In addition, other ICS training has been promulgated and incorporated into state, local, and organizational training strategies. In 2009, for example, the Federal Emergency Management Agency (FEMA) released the first eight Position-Specific Training courses for Command and General Staff in the ICS. Since then, FEMA has continued to develop and deploy unit-level training courses within the General Staff structure of an incident command organization. Among the courses now readily available for individuals and organizations seeking to refine their knowledge of the ICS are training for: (a) Division/Group Supervisors in the operations section; (b) Resource and Situation Unit Leaders in the planning section; and (c) unit-level positions in the logistics and finance/administration sections. For that and other reasons, the NIMS Training Plan provided by FEMA is now considered by many to be a "living document" that will probably never die.

Maintenance & Upkeep Vs. Few & Infrequent

The old adage, "Use it or lose it," has manifested itself with regard to ICS training and applications. Personnel who completed a particular level of ICS training have, in many cases, simply allowed the knowledge so hard acquired to stagnate through inactivity. Although most organizations expect to require the routine review and maintenance of tactical or positional skills, less attention has been focused on maintaining the knowledge and competencies that may be needed for establishing and implementing an incident command organization. This is quite simply because the types of situations (emergency incidents or major events) in which a formal ICS might be needed are, fortunately, few and infrequent. Largely for that reason, the maintenance of specific ICS skills is often overlooked. However, some organizations are beginning to direct more effort toward the maintenance of ICS knowledge and skills.

For many years, the National Wildfire Coordinating Group (NWCG) has used a system in which all personnel must maintain their skills and competencies through both recurring training and observed demonstration – e.g., actual incidents – on a three-year cycle. Personnel who pursue national credentialing for wildfire positions receive training in the classroom first. That training is followed by skills development activities similar to those used in many other high-level disciplines. However, unlike the practice in at least some of those other disciplines, the NWCG training phase is typically followed by a relatively intense period of "shadowing" in which the trainee performs the required skills in practical situations under the supervision and tutelage of experienced practitioners who evaluate the trainee's performance.

Over time, the trainee's demonstration of skills is documented through a *Position Task Book* (PTB). When the PTB has been completed, it is verified by the individual's supervisor or organization – who then submits the documentation to the NWCG for recognition. Once approved, the individual is issued a credential (certification) – commonly referred to as a "Red Card" – that includes, among other information, the personal data and documented qualifications of the individual.

Over the past decade, this documentation has also been entered into a national IQS (*Incident Qualifications System*) database – which is maintained by the NWCG as a "registry" of individuals who have met the criteria required to be assigned specific positional roles on an incident occurring anywhere within the United States. Experience has shown that this process generally works very well for the limited U.S. community of wild-land firefighting resources.

When used in conjunction with the *Resource Ordering and Status System* (R.O.S.S.) database system, the IQS provides the NWCG and its member organizations a comprehensive national inventory of qualified and available personnel resources for all ICS positions. However, such a system does not yet exist for the "all-hazards" incident-management system being promulgated by the Department of Homeland Security. Hence, there is no driving force to acquire or maintain ICS credentials for a large number of emergency personnel working outside of the wild-land firefighting realm.

Creating Opportunities: The Mirroring Approach

In the broader scope of all-hazards incident management, a welcome challenge has been that the nation does not experience the volume of incidents that would necessitate establishing fully staffed incident command organizations on a regular basis. Consequently, although skills maintenance at the tactical level is relatively easy through routine practice and actual response activities, the maintenance of management and command skills is a much more challenging requirement. Incident Commanders and Operations Section Chiefs generally have sound experience levels, and Safety Officers and Public Information personnel can usually practice their skills on a regular basis. However, the other general staff positions – i.e., Planning, Logistics, and Finance/Administration – as well as unit-level positions often do not have as many opportunities to review or hone their skill sets on a continuing basis.

One way to maintain and reinforce previous ICS training that is gaining popularity is to implement a deliberately structured incident command organization even in situations when the formal staffing of some or even most positions is not actually needed. For example, a more expansive ICS organization may be established to plan and manage a relatively routine activity such as a group outing or conducting a public affairs event for school children. This strategy may be particularly useful in cases where local personnel are not seeking national credentials (which require the more detailed completion of a PTB). In the much less urgent structured situation, personnel have an opportunity to practice and apply their positional skills without the intense urgency automatically provided by a major incident.

Another option sometimes being adopted is the practice of "mirroring" personnel – i.e., by having two members of the same unit not only to function in the same position but also, while doing so, allowing them to affirm or reinforce their knowledge and skills and even correct or coach one another, as and when appropriate. The mirroring approach requires the two participants to work collaboratively both in making decisions and in taking the actions needed to accomplish the stated objectives postulated by the IC leader. One cautionary note: This approach presents the potential challenge of conflicting perspectives for decision-making, making it imperative that the paired individuals resolve their differences both quickly and effectively in order to issue a single directive. (An after-action review is often conducted, in fact, to enable each participant to review all aspects of the activity just completed.)

The Routine Rotation Of Relationships & Responsibilities

A third option is to apply the fundamental ICS principles in the organization, planning, and managing of routine activities. For example, some (perhaps most) ICS position responsibilities can be delegated to participating staff for a training program. The program manager or training officer may designate, from the students participating, an incident commander as well as safety, operations, planning, and logistics officers.

Subordinate positions also may be designated to manage or supervise various aspects of the activities planned. The program administrator or training officer then would serve as the "Agency Administrator," providing overall guidance and oversight. If the training program is an ongoing activity, different personnel can be rotated to various positions throughout the course of the activities. This option not only helps reinforce positional knowledge, but can also broaden the various individuals' understanding of the relationships between different position responsibilities in the overall ICS scheme. Another advantage is that, although it should not be considered a means to qualify individuals for credentialing at the highest levels, it does provide more routine review and reinforcement of basic knowledge and skills.

Some organizations have implemented other, and more specific, training and exercise programs to assist in the maintenance and reinforcement of ICS core skills and competencies. The

Virginia Department of Fire Programs (VDFP), for example, offers a one-day refresher class, "ICS Planning Process and Forms" – which is basically a sequence of tabletop exercises and activities to refresh trainees on the standard ICS forms used in developing an Incident Action Plan (IAP). As the class progresses, the students work through development of the forms to compose their IAP for a specific scenario.

The class concludes with all of the students, generally in working groups of six to eight individuals resembling an incident management team (IMT), providing an "operational period briefing" using the IAP materials they developed. The net outcome is a controlled but nonetheless challenging environment in which students refresh their fundamental knowledge of IMT functions. A particularly attractive aspect of instituting this type of class is the minimal costs involved (as determined by the facility and student materials used and, if necessary, instructor salaries).

Coming Next: A Just-in-Time Refresher Course

FEMA also is currently developing an online refresher course for those who want to review the most commonly used ICS forms. Information about this course is expected to be released later this year and may serve as a valuable annual refresher and/or – prior to mobilization for a significant incident – for the "just-in-time" training of personnel with limited experience or practice.

Another VDFP-developed program, "Command & General Staff – Practical Evolutions," features a "full-functional exercise" in which the participants are typically assembled as an IMT under "restricted" conditions and presented with a scenario for which they must perform the three critical elements for realistic incident management: (a) establishing a viable management organization; (b) identifying and resolving needs for sustenance (food) and accommodations (sleeping arrangements); and (c) developing a complete IAP within a pre-designated time frame – generally 12 to 24 hours from the beginning of the activities. Throughout the cycle, program controllers and simulators provide input and exercise "injects" requiring adaptation and adjustment by the team in ways very close to what often occurs in a real-life situation. All activities do take place in real time and inputs are "consequence-based" – i.e., if a decision is made or an action taken that is inconsistent with expected practices, the controllers and simulators will create an adverse response.

For example, if the trainees are preparing a grocery list for meals and forget to list mayonnaise, they do not get any mayonnaise. Conversely, when the expected action is actually taken, the controllers and simulators provide reinforcing inputs or simply allow the actions to continue unaffected. The participants are thus placed in a situation that closely resembles an actual deployment with minimal amenities – which they (the students) will personally plan and execute.

This VDFP program is typically conducted in a remote location (to minimize distractions) and offers few, if any, conveniences often associated with a regular training class – e.g., no hotel bars, restaurants, or other amenities. The result is a bare-bones scenario that both enhances and intensifies the focus of the participants. As with the ICS Planning and Forms refresher class, the participants are required to deliver an Operational Period Briefing, using the IAP forms which they themselves develop in accordance with the ICS planning cycle postulated. An after-action review is then conducted by the controllers to: (a) highlight the sound practices emphasized; and (b) offer corrective suggestions to remedy actual and/or potential deficiencies.

This same program can be conducted for one or several consecutive cycles either with the rotation of personnel or the scheduling of additional cycles for the same team. A peripheral benefit is that the program enables the managers and administrators to practice the same organizational taskings using ICS as the participants must do to "manage" their scenario. Admittedly, there are somewhat greater costs for this program – e.g., for lodging, meals, and staffing a cadre of qualified controllers and simulators. However, the overall cost can be minimized both by detailed and thorough advance planning and by the use of qualified in-house staff to conduct the program.

In summary, training and exercises are the best and by far most effective way for establishing and maintaining a fundamental ICS organizational capacity. In addition, the creative application of ICS for routine activities provides a natural fit both for managing those activities and maintaining – and usually upgrading – personnel knowledge and skills in applying ICS principles.

Stephen Grainer is the chief of IMS programs for the Virginia Department of Fire Programs. He has served Virginia fire and emergency services and emergency management coordination since 1972 in assignments ranging from firefighter to chief officer. As a curriculum developer, content evaluator, and instructor, he currently is developing and managing VDFP programs to enable emergency responders and others to achieve NIMS compliance requirements for incident management. In 2010 he was elected President of the newly established All-Hazards Incident Management Teams Association (AHIMTA).


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The New CDC "Zombies" of Emergency Preparedness

By Joseph Cahill, EMS

The immense increase in the use of social media offers many new opportunities to educate the American people on emergency preparedness in general and to move agency messages to a broader target audience. Another result of the much expanded range of information outlets – primarily the Internet – is that the media itself often plays a backseat role while their message is being widely disseminated.

Because of the increase in new distribution channels, agencies that want to get an emergency preparedness message out to their constituents must carefully consider how to present that message. For many years, states have followed the federal lead and pressed the message of "self-reliance through preparedness" through sites such as Ready.gov, among others. Their collective message has been that everyone must take the time needed – now, not when it is too late – to prepare themselves and their families so that, during a future time of disaster, each household has enough supplies to survive for at least a few days without needing, or receiving, emergency assistance from public sources.

This preparedness message has reached millions of citizens across the nation and, without a doubt, many of those citizens have not only taken heed but also taken action. However, the omnipresent and continuing nature of the important public message has, unfortunately, reached the point where it now risks fading into the background noise of everyday life.

An Apocalyptic Vision of Survival – In a Properly Prosaic Way

Enter "the Zombies" (so to speak). The Atlanta-based CDC (Centers for Disease Control and Prevention, one of the busiest and most important agencies of the U.S. Department of Health and Human Services), keeps its extensive website busy with a number of informative blogs. In mid-May, writer Ali S. Khan posted a guide to surviving what he called the "Zombie Apocalypse." The terminology may sound trite – and/or sensational – but the Khan guidelines are in reality a very effective vehicle for this particular message – in large part, it seems, because of the attention-grabbing juxtaposition of the supposed topic, zombies, and the venue selected, a somewhat prosaic but also extremely formal federal website. Of course, the actual topic of "the zombie blog" is "preparedness."

The message itself is the real priority, of course – but the selection of the media used is quite deliberate and should not be ignored. With and in large part because of the explosion of the "new media" – i.e., blogs, tweets, Facebook pages, and podcasts – responder agencies now have not only new opportunities to expand the distribution of their message but also a number of new challenges to consider. The main advantages provided by the blogs/tweets etc. are speed and ease. Unlike a traditional webpage, or a paper-and-ink publication, the new media can be posted and made available to the public within moments after the decision to publish has been made.

Distance & Documents; Opportunities & Objectives

Another advantage provided, both literally and figuratively, by the new media is distance. Not the distance from the writer to the reader – although being instantly global is a definite advantage provided by the Internet – but the distance between the writer and the agency. Documents produced by an agency belong to that agency; they are or should be scientifically based; and they provide information that already has been reviewed and thoroughly "vetted."

In other words, they are intended to be concise and accurate vehicles for information. And they are. CDC itself, to cite but one example, produces and periodically updates a long list of informational briefs on various diseases and a broad spectrum of other threats to the American body politic.

On the other hand, blogs are intended and usually considered to be opinion, for the most part, and for that reason, even though the information provided usually claims to be fact-based, readers do not have the same expectation of full and complete accuracy. This difference in perspective enables agencies to define other media products to fit their needs and objectives. Distance can be placed between the agency and certain types of information simply by selecting an outlet that has been carefully defined and identified as providing the distance usually desired.

CDC's "Zombie Apocalypse" message, for example, has been retweeted, shared on Facebook, included in YouTube videos, reported on various newscasts, and emailed from one chat room to another. So, although all government agencies must be extremely careful when using what might seem to be tongue-in-cheek advertising to relay important information, the CDC certainly seems to have succeeded in using the new media now available to bring an important message back to life, and to the American people, in an unconventional way.

For additional information on the original Zombie Apocalypse blog, visit http://www.bt.cdc.gov/socialmedia/zombies_blog.asp

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Joseph Cahill, a medicolegal investigator for the Massachusetts Office of the Chief Medical Examiner, previously served as exercise and training coordinator for the Massachusetts Department of Public Health, and prior to that was an emergency planner in the Westchester County (N.Y.) Office of Emergency Management. He also served for five years as the citywide advanced life support (ALS) coordinator for the FDNY - Bureau of EMS, and prior to that was the department's Division 6 ALS coordinator, covering the South Bronx and Harlem.

All-Hazards Response Training Updated & Expanded

By Shannon Arledge, Exercises

As recent weather, wildfire, and other disasters across the nation have reminded Americans, an emergency response force prepared for mass-casualty catastrophic events is not a luxury, but a continuing necessity. For that reason, training at the Center for Domestic Preparedness (CDP) takes an all-hazards approach – which means, among other things, that the same tactics and principles used to cope with a terrorist incident can also be used in responses to natural and/or other manmade disasters.

When the CDP – located in Anniston, Alabama – was founded in 1998, it was envisioned as a resident facility that would train a maximum of 10,000 responders per year; in this fiscal year alone, though, CDP staff has already trained more than 78,000 responders from agencies and organizations throughout the United States and its territories, well exceeding the initial expectations of the late 1990s.

The CDP now develops and delivers 55 advanced training courses for emergency response providers, emergency managers, and other government officials from state, local, and tribal governments. CDP training focuses primarily on incident management, mass-casualty responses, and the host of other high-priority tasks required following a catastrophic natural disaster or terrorist act. For planning purposes, it helps considerably that the CDP training for state, local, and tribal responders is fully funded by the Federal Emergency Management Agency (FEMA), a major branch of the U.S. Department of Homeland Security.

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COBRA, Toxic Chemicals & a Noble Addition

The CDP training incorporates numerous field exercises and hands-on scenarios designed to build and test response skills in settings that are as realistic as possible. A unique asset in this realistic training is the center's Chemical, Ordnance, Biological, and Radiological (COBRA) Training Facility – the only U.S. toxic chemical training site available for the nation's emergency responders. Many exercises at the COBRA facility feature civilian training in a true toxic environment, using real chemical agents.

"This training re-instills the confidence I have in my ability to respond," said Kenneth Garner, a police lieutenant from Sevierville, Tennessee. "I can take this back to the department and county to help other first responders. The CDP is an excellent tool, and more responders on the street need to take advantage of its availability."

In 2007, the CDP added the Noble Training Facility to its infrastructure by converting the former Army Noble Hospital into a state-of-the-art training site for health and medical education related to major disasters and mass-casualty events. The Noble facility now serves as the only hospital in the United States dedicated solely to training. "I have never experienced training like this," said Marci Flores, an emergency department assistant manager and registered nurse from Sacramento, California. "This training gives me the skills, knowledge, ability, and tools that I need to be prepared … [for] a real-life incident."

To maintain and, in fact, upgrade the realism necessary for effective training, the CDP will begin remodeling the Emergency Department at Noble later this month. The renovation will bring the hospital's old Emergency Department up to par with more modern emergency rooms. The project is expected to be completed within the next several months.

"The CDP's hospital emergency department will mirror real-world emergency departments," said Rick Dickson, the center's assistant director for training education. "This renovation demonstrates our commitment to the learner's training experience. The enhancements [planned] will better serve the healthcare communities' educational needs. We are excited about the renovation – particularly the realism it will bring to our scenarios."

Experience, Teaching Ability & The Vital Signs of Professionalism

Among the specific upgradings planned are: (a) the addition of a non-ambulatory patient entrance; (b) the re-designation of two hazmat patient isolation rooms and a number of nurse triage stations; and (c) the incorporation of some much-needed "vital signs" collection points. These and other upgrades, according to Mick Castillo, CDP technology integration coordinator, will further enhance the realism that makes the CDP training venues so unique.

"Our healthcare training programs owe a good deal of their success to the realistic venues in which they operate," said Castillo. "Venue considerations are of great significance and not simply because of the obvious aesthetic improvements. We have grown to appreciate the weight our emergency responder students place on realism in an advanced hands-on training program."

Training Worth the Trip

In addition to its unique facility venues, the CDP offers a broad spectrum of training in the latest medical techniques and procedures and gives responder trainees the opportunity to use a full range of state-of-the-art medical equipment during their time at Anniston. The courses offered include a number of Continuing Education Units that may be used to fulfill professional requirements. All CDP instructors are required to have at least 10 years of emergency response experience before they are even considered for a position. Qualified instructors are very carefully selected based on their professional experience, their knowledge of national response elements, and – of particular importance – their teaching ability.

"As emergency response organizations look for innovative ways to stretch training dollars, a facility like the CDP may be the answer," said Denis Campeau, director for training education. "Funded training – including [the cost of] travel, meals, lodging, and tuition – provides a unique resource for departments to prepare," he commented. "Our training venues are just that: unique – from our toxic agent facility to the hospital, we are one of a kind."

Shannon Arledge is the public information specialist at the FEMA (Federal Emergency Management Agency) Center for Domestic Preparedness in Anniston, Alabama. A retired Marine gunnery sergeant, he served in numerous public affairs/public information assignments during his 20 years on active duty, which included tours of duty at Marine Corps Headquarters, the Defense Information School, and the Marine Corps Air Station in Cherry Point, S.C. During the latter assignment he deployed to the Persian Gulf in support of Operation Enduring Freedom and as chief of public affairs for Marine Forces U.S. Central Command.

Corporate Support for a Healthcare Facility in Crisis

By Craig DeAtley, Health Systems

An increasing number of U.S. hospitals and skilled nursing/long-term care facilities are becoming part of the nation's overall corporate healthcare system. These new alliances raise the question: "What is corporate's role in emergency preparedness?" The answer to that core question, which should and must be asked in the pre-incident state of planning, starts with a realization that the primary corporate responsibilities are to: (a) promote system-wide readiness; (b) facilitate the delivery of requested assistance during an emergency; and (c) ensure optimal recovery of the facility from the crisis.

To meet these objectives effectively requires that those responsible for leading corporate emergency preparedness efforts craft a truly comprehensive emergency management program (EMP). An effective EMP addresses a broad spectrum of topics including but not limited to the following: response roles and responsibilities; a hazard-vulnerability analysis (for the corporation); an emergency operations plan (EOP); and an incident command system (ICS – the primary management tool specifically designed for corporate headquarters/system to employ during an emergency). Various Memorandums of Understanding (MOUs) and other resource-management documents – e.g., vendor lists, and contracts – should be included in the EOP as well.

The EMP also addresses the education and training strategies that should be used to periodically familiarize corporate personnel, as well as the leadership at each partner facility, with: (a) the ICS itself; (b) the relevant response procedures that should be used; and (c) the technological systems and equipment available for information sharing throughout the system. Tabletop and functional exercises specifically involving the corporate members also should be periodically conducted – and should include the completion of an honest, accurate, and detailed post-exercise "Hot Wash" as well as the writing, and sharing with all of the participants, of comprehensive after-action reports.

Much of the work associated with the EMP should be carried out by a corporate emergency preparedness committee composed of the emergency manager(s) and/or other appropriate representatives from each facility along with pre-designated senior personnel from corporate headquarters. The committee should meet on a regular basis, either in person or

by teleconference, and ideally should be led by the corporate emergency manager (or another senior official selected by the group itself). The minutes of each meeting should be published and distributed to all committee members – all of whom also should be encouraged not only to keep their facility colleagues current on corporate-level emergency preparedness activities but also to bring their own facility issues and ideas to committee meetings for all-hands discussions.

The Corporate Incident Management Team

An important aspect of the corporate headquarters' ability to respond to its own internal incident – a building fire or bomb threat, for example – or to a system-wide emergency would be the effective utilization of an ICS that: (1) is consistent with National Incident Management System (NIMS) principles; and (2) mirrors, as closely as possible, the appropriate elements of the Hospital Incident Command System (HICS) that their hospital partners would and should be using both before and during response operations.

An effective Emergency Management Plan addresses a broad spectrum of topics including but not limited to the following: response roles and responsibilities; a hazard-vulnerability analysis; an emergency operations plan; and an incident command system – the primary management tool specifically designed for corporate headquarters/system to employ during an emergency

Among the senior corporate command positions that may be needed in many if not quite all situations are the following: Incident Commander; Liaison Officer; Public Information Officer Planning Section Chief; Logistics Section Chief; and Finance/Administration Chief. A number of subordinate positions also should be included on the Incident Management Team (IMT) chart and filled as necessary during the incident. (An Operations Section is usually not needed because, except on very rare occasions, there would be no actual operations being conducted at Corporate Headquarters – unless, of course, that is in fact the location of the emergency.)

The pre-designation of two or three persons for each subordinate position also is not only recommended but vital to the success of the corporate response. All of them should be provided with the management tools required – Job Action Sheets, for example, as well as command vests, and designated forms – and scheduled for the periodic training they would need to carry out their roles and responsibilities.

Corporate Support During an Actual Response

Generally speaking, it will not be corporate's role to actively be "in charge" and direct individual facility responses. What will and should be corporate's role, rather, will be to gather information about each facility's response efforts to ensure that: (a) the assistance requested – personnel, equipment, or supplies – is in fact being provided; and (b) all other response issues are being effectively addressed as well. The information sharing that is needed to fulfill these responsibilities might be met by requiring that each facility submit an Incident Action Plan for every operational period, posting information on an intranet-based corporate information-sharing system as well as through phone calls and well facilitated teleconferences.

The corporate Public Information Officer (PIO), working with his or her facility PIO colleagues, would collaborate to ensure that all media messaging needs are being addressed and the public is kept as fully and accurately informed as possible about the collective response efforts. Meanwhile, other members of the corporate IMT, obviously, should be working with each facility to ensure that recovery operations, not just response needs, are also being optimally met. If and when necessary, the corporate IMT also may and should interact with local, state, and federal authorities and/or other corporate healthcare systems to address response issues and concerns.

To briefly summarize: A growing number of U.S. healthcare facilities are now required to network and collaborate not only with other community response partners but with corporate headquarters as well. Critical to the success of this new interaction with corporate colleagues are: (a) a mutual understanding of the role of the corporate response; (b) recognition of how the corporation is designed to integrate with the facility (both during and after the crisis); and (c) development and promulgation of the plans needed to facilitate an effective "system" response if, as, and when needed.

Craig DeAtley is the Director of the Institute for Public Health Emergency Readiness at the Washington Hospital Center, the National Capital Region's largest hospital, Emergency Manager for National Rehabilitation Hospital and co-executive director of the Center for HICS Education and Training. Prior to assuming his current position, he was an Associate Professor of Emergency Medicine at George Washington University for 28 years, before leaving to start the Institute.

The Growing Complexities of Port Rescue Operations

By Corey Ranslem, Coast Guard

Fire departments across the nation have developed many specialized response teams over the past 15-20 years to handle the complexities associated with responding to hazmat and technical rescue incidents – the latter differ from so-called "routine" operations because they usually involve very highly trained and specialized rescue teams and/or special types of equipment. Today, largely because of the tragic events of 11 September 2001, the development and use of specialized law enforcement and fire-rescue response teams is becoming commonplace even in smaller fire departments. In addition, a concentration on homeland security, and especially port security, has opened new grant funding sources for departments to receive additional training and purchase the much needed equipment required for specialized responses, particularly in the port environment.

As worldwide trade continues to grow, hazardous materials and chemicals are routinely shipped through ports around the globe. The fire departments that protect those ports require specialized training and equipment to manage many complex rescue scenarios. The U.S. government started the Port Security Grant Program (PSGP) after the events of 11 September 2001 to provide additional funding for local agencies dealing with port security and response duties. The PSGP already has provided approximately $2.5 billion of grant funding for state and local agencies, as well as private industry, to improve their port security and rescue response capabilities.

"The federal port security grant program … has been a great program to help my department obtain additional equipment and training to effectively respond to incidents in the Port of Seattle," comments Assistant Chief Alan Vickery, a 45-year veteran of the Seattle Fire Department in Washington State. "Through the PSGP, we have a level of preparedness and response we would not have without the program to better protect the residents of Seattle."

Port incident responses require a more complex set of capabilities than are needed for non-port incidents. To manage the numerous issues that must be taken into account, fire departments as well as other state and federal agencies must all respond and work together when an incident occurs at and within a port. "We train on a regular basis with law enforcement agencies and the Coast Guard on port response scenarios," comments Captain Mike Nugent of the Fire-Rescue Department's technical rescue team (TRT) in the Sheriff's office of Broward County, Florida. "It is extremely important for our department to understand the response capabilities of the other neighboring agencies and the U.S. Coast Guard." Nugent and Captain James Napp started the county's technical rescue team almost 20 years ago, in 1992. Since the team's inception, they have responded to thousands of TRT-related calls both in and out of the port.

High Angles, Confined Spaces And Trench Rescue Operations

The story is much the same 3,000 miles away, in the state of Washington, where the Seattle Fire Department responds to approximately 60-70 incidents per year in and around the port. That daunting workload includes at least one major shipboard fire response each year, according to Chief Vickery. "We have four fireboats that range in size from 40 feet to 125 feet, and two of those vessels have the capability to respond to CBRNE [chemical, biological, radiological, nuclear, explosives] incidents on the water or in the port," he commented. "We also have a technical rescue team that responds, along with our waterside assets, to specialized rescue calls in the port such as high-angle or confined-space rescues."

Vickery and Nugent agree that frequent and effective training is key to the success of dealing with port response incidents. After firefighters are accepted for the TRT in Broward County, they attend and participate in approximately 350 hours of initial training – which is followed thereafter by 40 hours of additional monthly training. Vickery says his department has almost 1,000 firefighters trained in the basics of technical rescue operations – including the highly specialized skills required for dealing with collapse, trench-rescue, and hazmat situations. "We currently conduct quarterly drills, and yearly exercises, with the surrounding agencies, the U.S. Coast Guard, and the port businesses," says Vickery. "It is extremely important for us to include our industry partners in these drills because they know their facilities better than we do and can help facilitate a much better response."

Vickery himself sits on the Coast Guard's Area Maritime Security Committee (AMSC) to help improve the close coordination needed between the Seattle Fire Department and the U.S. Coast Guard. "The Coast Guard monitors our radio system in their command center so they can respond to our calls for assistance in the port," he said. "It is important we understand each other's capabilities so we can provide the best response."

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Significant Challenges in Meeting "Every Possible Scenario"

Nugent's team responded to a deadly gas leak in Port Everglades in 2008 when three port workers were killed by Argon gas in the hold of a ship. "We had immediate concerns of a hazardous environment when we first received the call, and we knew we needed to get into the hold as quickly as possible to get the workers out," Nugent recalls. The workers had been immediately overcome by the Argon gas, however, and all three died before the would-be rescuers arrived on the scene. "When we respond to the port, there are a number of things to consider: what type of vessel, passenger or cargo; if it is cargo, what type of cargo is onboard; where on the ship is the incident; how many potential victims are there; and how do we best access the area of the incident."

Vickery agrees with Nugent that there are a number of complexities in the port and shipboard environments that are not present in most "land-side" responses. "A ship is like a high-rise building laying on its side in the water with only a few access points," he points out. "We face significant challenges of access when trying to get onboard a vessel. That is why it is important for us to train, on both ship design and layout, on an ongoing basis."

The dangers associated with port responses will undoubtedly continue to increase along with the complexities of shipboard and port rescue operations. More than 90 percent of the goods and materials coming into the United States each year are carried by ships, and that level is likely to increase for many years to come. Meanwhile, cargo ships not only are growing in both size and efficiency, but also are more complex in many ways than their predecessors – and therefore will continue to challenge the resources and capabilities of local fire departments (and local Coast Guard units). "When we respond to the port," Nugent commented, "we bring all the resources we think we might need to make sure we cover any and every possible scenario."

Corey D. Ranslem, chief executive officer of Secure Waters LLC – a maritime-security and consulting firm heavily involved in maritime training, maritime security, and a broad spectrum of other programs in the maritime field – is the former regional manager of Federal Government Operations for Smiths Detection. He has received numerous awards and citations from the U.S. Coast Guard and other agencies and organizations active in the field of maritime security. He holds a Bachelor's Degree in Communication and Political Science from the University of Northern Iowa, an MBA in International Business from Georgetown University, and has almost 15 years of experience in maritime law enforcement and security

UK Approaches in Disaster Medical Education

By Robert Stellman & James Matheson, Emergency Management

Disaster medicine has been practiced for as long as medics have been rising to the challenge of treating patients among the devastation caused by both natural and man-made catastrophes. Now, however, there is increasing awareness of the diverse skills required to intervene effectively during catastrophic events and of the necessity to: (a) formalize and evaluate the training of healthcare professionals in the field; (b) recognize the collection of skills and training necessary to establish the specialty or subspecialty of Disaster Medicine; and (c) ensure the ubiquity of essential disaster-response knowledge and skills among those who will be called upon to provide that response. In other words, disaster response should not be haphazard but, rather, both structured and efficient, with skilled leaders to manage it.

The United Kingdom is often found at the sharp end of such disaster medicine theory and practice – e.g., during the Blitz of World War II, the terrorist attacks of recent years, military commitments in Iraq and Afghanistan, and the London riots earlier this month. In addition, centuries of independent medical tradition and a unique nationalized health system have produced catastrophe planning and response systems that are often both innovative and unusual.

Today, as disaster medicine approaches the formal academic recognition in Britain it already has in the United States, the timing is ripe to explore the similarities and differences – in both thinking and practice – between the two nations. Accordingly, this article presents a summary of some of the United Kingdom's key paradigms in education for disaster medicine, introduces a new and unique degree-level leadership course, and discusses the value to educators (on both sides of the Atlantic) of exploring overseas models in this way.

The University of London's New BSc In Leadership in Disaster Medicine

Recognition of the importance of teaching disaster medicine in the undergraduate medical curriculum led to development – at St. George's, University of London, Centre for Trauma, Conflict & Catastrophe – of the intercalated BSc in Leadership in Disaster Medicine. The new BSc course aims

to enhance the knowledge, skills, and careers of potential future leaders in the field of disaster medicine.

The foundation module – with teachings on security and survival, clinical casualty management, incident management and mass-casualty planning, tropical medicine, extreme medicine, and public health in disasters – is delivered through a series of lectures, seminars, and topical debates, supported by practical and tabletop exercises.

Most sessions focus on leadership, management, and decision-making in national and international disaster responses. In addition, opportunities will be facilitated for students to undertake attachments and visits to influential players in disaster response – such "players" including but not necessarily limited to international and nongovernmental organizations, and government departments, as well as journals published with a focus on disaster medicine. The University encourages students to undertake relevant research or literature review and helps them get their work related to the course published.

The UK is often at the sharp end of disaster medicine theory and practice - e.g., during the Blitz of World War II, terrorist attacks during the last 10 years, military commitments in Iraq and Afghanistan, and the London riots this month; in addition, centuries of independent medical tradition and a unique nationalized health system have produced catastrophe planning and response systems that are both innovative and unusual

Diploma in the Medical Care of Catastrophes (DMCC)

The DMCC was instituted in 1993 by the Faculty of Conflict and Catastrophe Medicine at the Society of Apothecaries, one of London's livery companies dating from 1617. This postgraduate diploma is aimed at individuals who provide medical, surgical, and public health response to environmental and man-made disasters including conflict, both at home and overseas.

A part-time one-year instructional course prepares doctors, dentists, nurses, and paramedics for the final examination with modules on the epidemiology of disasters, priorities for intervention, the disaster environment, the specialized application of clinical knowledge, and team security. The examination consists of a written article and a series of objective-structured clinical examinations in which candidates are questioned on their detailed knowledge of areas such as medical planning for mass gatherings and triage in the disaster setting.

Major Incident Medical Management and Support (MIMMS)

Offered by the Advanced Life Support Group at numerous centers in the United Kingdom and worldwide – and with military adopters, including the North Atlantic Treaty Organization (NATO) – MIMMS is a three-day course teaching a practical approach to on-the-scene response operations by healthcare professionals. MIMMS is centered on an "all hazards" model – i.e., a systematic approach flexible enough to be applied to any major incident.

Here it should be noted that a "major incident" is the preferred term in Britain for an emergency that requires the commitment of extraordinary resources and/or special arrangements from relevant services.

Teaching is delivered through lectures, tabletop exercises, practical workshops, and a field exercise and is supported by an extensive manual, currently going into a third edition. Topics covered include: (a) the organizational structure of relevant health, emergency, and support services; (b) appropriate preparation of personal, medical, and communications equipment; (c) priorities and approaches at the scene; and (d) practical radio skills and clinical procedures.

Attention also is given to the media, hospital response, and psychological aspects of a particular situation. HMIMMS – a two-day version of the course tailored to hospital rather than pre-hospital providers – is also offered, and teaches a similar intra-operable approach. Abbreviated one-day versions of both courses are also available.

The Royal Society of Medicine's Catastrophes & Conflict Forum

The Royal Society of Medicine in London – founded over 200 years ago – is one of the major providers of continuing medical education in the United Kingdom. Members – including doctors, dentists, veterinary surgeons, students of these disciplines, and allied healthcare professionals – are offered numerous edu-

cational resources and events by a number of specialty interest groups operating under the Society's aegis.

One such group is the Catastrophes & Conflict Forum. Recent events offered by the Forum and its partners have covered areas such as: improvised explosive devices and blast injuries; nuclear and radiological threats; and humanitarian opportunities overseas. The Society also occasionally arranges landmark international events with overseas partners, such as the 2007 Conference on Disaster Management, jointly convened with the New York Academy of Medicine.

Learning about the educational models of other nations provides a useful set of reference points for the critical appraisal of domestic approaches. Those interested in disaster medicine education – or domestic preparedness education in general – may wish to consider whether U.S. and UK paradigms in these areas can usefully influence each other. Such cross-fertilization of ideas may of course be limited by differences in national healthcare and government systems, as well as by socioeconomic and cultural factors, but in an age of international humanitarian and military cooperation, at least some degree of harmonization may be considered desirable in this field as well. To take but one example: The variety of triage systems used across the world means that a given triage category can have some rather different meanings to American and British responders. Accordingly, working toward the standardization of such models may be a valuable activity for educators around the world.

For additional information:
On The Royal Society of Medicine, visit http://www.rsm.ac.uk
On the Advanced Life Support Group, visit http://www.alsg.org
On The Society of Apothecaries http://www.apothecaries.org

Dr. Robert Stellman (pictured), MA (Hons, Cantab), MB, BS (Dist.), DPMSA, is a member of the governing Council of the Catastrophe & Conflict Forum. Involved in pre-hospital work for several years, he gained his medical degrees at the University of Cambridge and University College London. He received disaster medical training in both the United Kingdom and United States, as well as elsewhere around the world, and has gained ADLS, ADMR, DMEP, and MIMMS-Commander accreditation, among other qualifications. His research on cross-Atlantic approaches in disaster medicine won funding from the Drexler Foundation of the Royal College of Surgeons of England, and other institutions.

Dr. James IDM Matheson, BA (Hons), MBBS, DMCC, is a member of the council of the Catastrophes & Conflict Forum of the Royal Society of Medicine and the Faculty of Conflict and Catastrophe Medicine at the Society of Apothecaries of London. He lectures on the Leadership in Disaster Medicine BSc at St. George's, University of London, and has jointly edited Making Sense of Disaster Medicine, an undergraduate medical textbook.

Studying Hazardous Material Protective Gear in Action

By Terrence K. Cloonan, Exercises

A representative from the National Institute for Occupational Safety and Health (NIOSH) National Personal Protective Technology Laboratory (NPPTL – headquartered in Pittsburgh, Pennsylvania) – recently teamed up with a group of federal emergency responders for five days of hands-on training at the U.S. Center for Domestic Preparedness (CDP) and its Chemical, Ordnance, Biological, and Radiological Training Facility (COBRA-TF). The center, located in Anniston, Alabama, manages the nation's toxic chemical agent training facility for federal, state, and local emergency responders. In mid-July, the NIOSH representative was embedded to gain an understanding of the CDP's utilization protocols for the employment of military-specified nuclear, biological, and chemical personal protective equipment (PPE) currently in use at the facility.

Since 1998, the CDP, a major component of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA), has prepared emergency responders and public health professionals to recognize, prevent, protect, respond to, mitigate, and recover from chemical, biological, radiological, and nuclear or explosive (CBRN/E) mass-casualty all-hazards incidents. The CBRN/E all-hazards approach uses experienced responders to instruct tailored curricula via the use of traditional classroom lectures – followed by hands-on training with participants wearing the protective equipment used in performance-based, scenario-driven training lanes stressing public safety best-practice tactics, techniques, and procedures.

The participants in the mid-July course successfully completed hazardous materials evidence collection actions and hazardous materials technician operations for CBRN/E incidents. The two courses combined to deliver five days of intense specialized training in blended civilian-military chemical, biological, and radiological terrorism incident-response operations. The evidence collection course consisted of sixteen contact hours in law enforcement techniques followed by twenty-four contact hours in hazardous materials recognition operations related to industrial hazards and chemical, biological, and radiological terrorism incidents. The entire course was tailored to meet

Occupational Safety and Health Administration (OSHA) technician requirements. The week's training culminated in six contact hours of toxic chemical warfare agent training at the COBRA training facility – formerly known as the U.S. Army's chemical decontamination training facility (CDTF).

A 12-Step Standard & Next-Generation Equipment

Throughout the week, participants were given the opportunity to apply the skills and techniques taught, including: (a) the use of a 12-step crime-scene search protocol; (b) identifying ways that terrorists might produce and use agents; (c) conducting rescue, recover, cutout, and decontamination actions (on a non-ambulatory mannequin); (d) operating direct-read hand-held air/liquid sampling instruments to recognize a "hit" from numerous toxic agent sources; and (e) identifying criminal or suspect material and components using known common identifiers found in clandestine chemistry-set style laboratories.

The completion of these all-hazards training tasks, regardless of their complexity, required both team and participant self-focus coupled with the use of an experienced chemical agent specialist approach to maintain proficiency while working in the individual protective postures required for non-agent as well as live-agent training environments. Attendees and workers alike witnessed the controlled transfer of live toxic nerve agents in support of the sanctioned training objectives designed to increase user confidence in PPE, user proficiency in agent detection tasks, and team communications while wearing encapsulating protective ensembles.

The FEMA CDP has implemented, and long recognized, the paramount importance of occupational safety requirements for attending responders, assigned instructors, and contracted workers. The center's transition from the current use of military-specified PPE in the training facility to the next-generation equipment – addressed in OSHA, NIOSH, and National Fire Protection Association (NFPA) standards and regulations – is an historical benchmark for FEMA, CDC, and NIOSH. A successful transition is expected to allow the center to have a first-time use of NIOSH-approved chemical, biological, radiological, and nuclear air-purifying respirators (CBRN APR) worn with a baseline National Fire Protection Association (NFPA) 1994 *Standard on Protective Ensembles for First Responders to CBRN Terrorism Incident* compliant suit/ensemble technology.

Consensus Standards & A Common Starting Point

The new training PPE configuration and use can affect responders in three ways: (1) It is intended to integrate equipment items that represent identical replicas or surrogates of CBRN PPE, technology, and clothing covered by current regulatory and consensus standards; (2) It is also expected to provide a common training starting point for responders tasked to train and operate in CBRN dual-purpose protective equipment postures within the legal requirements of a local jurisdiction; and (3) It may ultimately enhance the survivability of public safety workers in a terrorism incident while improving the training academy curriculums conducted at state, local, tribal, and territorial levels of the public sector.

When selected and validated, an NFPA 1994 chemical/biological protective ensemble – modified to align with site-specific considerations unique to the FEMA training facility – is expected to consist of a CDP-specific NIOSH CBRN APR and a CDP-specific NFPA 1994:2007/2012 edition chemical/biological ensemble and/or similar non-NFPA ensemble consisting of a full-face tight-fitting respirator, suit, boots, and gloves (identified in a consensus FEMA CDP protocol focused on training re-use actions currently used in the COBRA-TF).

The PPE selection and re-use tasks are components of an interagency agreement that was established on 12 May 2011 between the U.S. Department of Health and Human Services, the Centers for Disease Control and Prevention (CDC), the CDC's NIOSH/NPPTL, and the FEMA CDP. The ultimate outcome is intended to be the development of FEMA CDP requirements, guidelines, or procedures for the selection and evaluation of replacement PPE and the use and re-use of CDP-specific PPE that rely on baseline NIOSH-approved CBRN APR and NFPA 1994 or OSHA-compliant ensemble technology criteria and standards.

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Training for Multi-Agency Response Efforts

By JL Smither, Public Health

Even successful responses can highlight areas in which improvement is needed in the training of responders, which is one reason – a big one – why the sharing of lessons learned is so important. Enhanced training that includes lessons from real-world situations and events can help responders familiarize themselves with their own roles, the policies of their agencies, and the unique challenges of working with other agencies during a multi-agency extended response.

In December 2009, the United Campus Ministry at the University of New Hampshire (UNH) hosted an event that involved a "drumming circle" in which participants brought their own drums and played them, along with other enthusiasts. During the two-hour event, about 70 people played and interacted with one another – while also socializing, dancing, and dining. Unfortunately, some of the animal-hide drums had been contaminated with a naturally occurring strain of anthrax that aerosolized while the participants were drumming away (on a total of 59 drums). At least one participant ingested the toxic spores.

Several weeks later, a woman who had participated in the drumming circle was diagnosed at Massachusetts General Hospital with gastrointestinal anthrax, the first case ever recorded in the United States; gastrointestinal anthrax is more commonly transmitted by the consumption of contaminated meat. The patient later recovered.

To control any further spread of anthrax, seven federal, 19 state, and 23 local agencies (from communities in areas near the University of New Hampshire in Durham) worked together to conduct the epidemiological investigation, prophylaxis activities, and remediation and recovery operations that were required. The response was successful – the New Hampshire Department of Health and Human Services offered prophylaxis to 84 potentially exposed people who had been at or near the community center during or after the drum-circle event; of the 59 drums, only two were found to be contaminated with anthrax and were disposed of.

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No one else is known to have contracted gastrointestinal anthrax from the event. However, like many of the relatively rare hazard responses that involve a large number of agencies, the response highlighted several opportunities for improvements in training.

Minor Errors & Omissions – With Potentially Major Implications

During the response and follow-up operations, carried out from December 2009 to April 2010, the New Hampshire State Emergency Operations Center (EOC) used WebEOC to track and manage information. Although some EOC staff members uploaded daily situation reports to WebEOC, not all staff members had been properly trained on and familiar with the WebEOC's full capabilities. Because they were not able to take full advantage of the system's real-time information-sharing features, cooperation between the numerous agencies participating was not as effective as it should have been, making it more difficult for the EOC to provide up-to-date timelines and the documentation of response efforts to emergency responders in the field. The incident after-action report notes that better training could have helped EOC staff members use WebEOC more effectively, and that could have increased situational awareness.

During the response efforts, the New Hampshire Department of Health and Human Services coordinated public information dissemination through the public information officers at each of the agencies participating. Throughout the lengthy response operations, however, three different people held the position of lead spokesperson, who served as the direct liaison with the media and public. For each transition, public information officers from each of the responding agencies had to provide in-depth briefings about: (a) everything they had done up to that point; and (b) their own operational procedures. The added workload not only caused some confusion among the agencies (and in

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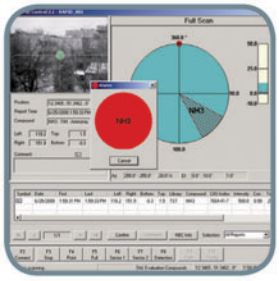

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the media), but also contributed to the dissemination of a few muddled or inconsistent messages. The after-action report recommends that, whenever possible, a single well trained spokesperson be prepared to represent agencies during long-term multi-agency responses.

The after-action report also highlights several areas for training improvement – e.g., maintaining a secure perimeter, and ensuring that all persons accessing the scene be required to use protective personal equipment (PPE). Another problem highlighted was that, although local police departments conducted environmental sampling (along with other agencies) and carried out daily drive-bys of the site, no one agency had been designated to provide a secure 24-hour presence to prevent unauthorized persons from entering the response zone. Because of that omission, some people not only entered the building unimpeded but also without the proper PPE. Although no one was contaminated by doing so, the effects during other hazardous materials events could be dire. With proper PPE training and a secure perimeter, responders can almost always ensure that contaminants are not spread beyond the disaster area.

Overall, though, the responders from federal, state, and local (New Hampshire) levels were able to contain the gastrointestinal anthrax contamination, and no other cases beyond the first patient were reported. In addition, the responders were able to work together to identify the likely source of the contamination, pinpoint other sites where it might have spread, and destroy the contaminated drums. The most important after-action finding, however, was that all responses pose unique challenges of their own and provide new lessons to be learned – and implemented through follow-on training.

Additional information and details on this incident and the subsequent response can be found in the New Hampshire 2009 Anthrax Incident After Action Report/Improvement Plan and related exclusive Lessons Learned, available on Lessons Learned Information Sharing (www.llis.dhs.gov)

JL Smither is the outreach and operations manager for Lessons Learned Information Sharing (LLIS.gov), the Department of Homeland Security/Federal Emergency Management Agency's national online network of lessons learned, best practices, and innovative ideas for the U.S. homeland security and emergency management communities. She received her bachelor's degree in English from Florida State University.

Michigan, New York, North Carolina, and Wisconsin

By Adam McLaughlin, State Homeland News

Michigan

St. Clair County Partners with U.S. And Canada in Virtual City Program

To enhance information sharing and improve situational awareness at the local level, the federal government has enlisted the help of St. Clair County, Michigan, the nation's primary entry point for carriers of hazardous materials between the United States and Canada. The county also is the site of a "Virtual City" pilot program that permits the sharing of GIS data and information feeds between and among several U.S. and Canadian departments and levels of government.

Virtual City is an initiative of the U.S. Department of Homeland Security's Science and Technology (S&T) Directorate, which wanted to develop a Microsoft-based platform for information sharing, said Jeffrey Friedland, the county's emergency management director. "There is Esri, there is Google, there is a variety of platforms – and Science and Technology thought a Microsoft-based platform would be beneficial to have as another option for communities to use," he said.

Although St. Clair is a relatively small county – with about 170,000 residents – it frequently works with various agencies and communities in Canada and has a high concentration of critical infrastructure. It did not have an information-sharing platform, though, and Friedland said the county had been looking at different possibilities to fill that void and was willing, when approached about participating in the Virtual City pilot, but under two conditions: First, the system had to be cost-effective so that smaller communities could afford it. Second, the county's staff would have to be able to input 95-99 percent of the data related to the information provided without having to rely on GIS technicians and/or Microsoft itself to make the periodic updates that would undoubtedly be required.

The county was willing, when approached about participating in the Virtual City pilot, but under two conditions: First, the system had to be cost-effective so that smaller communities could afford it; Second, the county's staff would have to be able to input 95-99 percent of the data related to the information provided without having to rely on GIS technicians

The system finally agreed on – called the Regional Interoperability Collaboration Network and dubbed RESILIENT – is a Web-based interface that provides a common operating picture for the county. Among the helpful data that can be viewed on it are such information as the location of government facilities, public schools, and special-needs populations; areas considered to be "at risk" (because of the toxic chemicals present); and ongoing 911 incidents. "If we need to do our job, we are dependent on so many other facilities and people to get the job done," Friedland pointed out. "If you keep the information within a fire department and your water system goes down, then your fire department cannot operate."

In addition to sharing information countywide, the S&T is also looking at how to connect different systems together for cross-border and international collaboration. Friedland said the "good thing" is that governments do not have to use the same platform and also that "Science and Technology's focus is on the umbrella that connects all those together at a higher level."

The Virtual City program is being implemented in three phases. It began with the platform's creation when S&T contracted with Michigan-based IDV Solutions. Phase Two included the addition of extra data feeds and components that the county thought were important – primarily to facilitate "white board" functionality for incident commanders. St. Clair is now beginning Phase Three, which will integrate such additional software as that related to the Critical Infrastructure Management System.

New York

NYPD Conducts Training on New Counter-Terrorism Technology

The New York City Police Department is testing new ground-breaking counter-terror technology that is expected

to dramatically increase its ability to detect and thwart a potential radiation attack, officials said on Thursday, 28 July. The technology will allow a command center in lower Manhattan to monitor an estimated 2,000 or so mobile radiation detectors carried by officers on their daily rounds throughout the city. The detectors will send a wireless real-time alert if there is a reading signaling the possible presence of a "dirty bomb."

The system already is being tested under the watch of federal authorities in hopes it can be perfected and used elsewhere. "This is the first and only place you will see it," said Jessica Tisch, an NYPD counterterrorism official. "It has been tested in the field. It works, and we are hoping to get [the wireless detectors] deployed in a few months."

A dirty bomb – which is intended to spread panic by using a small explosive to create a radioactive cloud in urban settings – has never been discovered or detonated in a terrorist plot against the United States. But U.S. law-enforcement officials consider dirty bombs a serious threat not only because such weapons are easy to build but also because of credible intelligence reports that foreign terrorists have been planning for some time to use them against American cities.

The radiation detection system is being developed as part of a $200 million security initiative to provide better protection for lower Manhattan. Police say the overall plan was inspired by the so-called "Ring of Steel" encircling the business district in London, but is broader in scope and sophistication than its English predecessor.

The initiative will rely largely on 3,000 closed-circuit security cameras carpeting the roughly 1.7 square miles south of Canal Street, the subway system, and some areas in midtown Manhattan. Approximately 1,800 cameras have already been installed, and are "up and running"; the rest are expected to come on line by the end of the year.

In 2008, police began monitoring live feeds from the cameras around-the-clock at a high-tech command center in lower Manhattan, home to Wall Street, the new development at "Ground Zero" of the 9/11 2001 terrorist attack, and several other sites needing heightened protection. "We are talking about some of the most significant targets anywhere in the world," Police Commissioner Raymond Kelly commented.

The NYPD is using a single, high-bandwidth, fiber-optic network to connect all of its cameras to a central computer system. It is also pioneering "video analytic" computer software designed: (a) to detect potential threats such as unattended bags; and (b) to retrieve stored images based on descriptions of terrorists and/or other criminal suspects.

North Carolina

Durham Begins Public Pilot for Texting 911

Although texting has become a popular mode of communication, improving the ability of public safety agencies to "join the conversation" in times of emergency has proven difficult. Earlier this month, though, Durham, North Carolina, started a pilot program to accept text messages sent to its 911 dispatch center by Verizon Wireless customers. The test is expected to run through January 2012.

Local public safety officials see texting 911 as a way to reach hard-of-hearing individuals and people in situations where making noise could put them in greater danger. In addition, media reports have highlighted instances in which disaster survivors were able to send text messages when their wireless phones did not have enough capacity left to complete a call.

As part of the pilot, Verizon Wireless configured its system to allow text messages to be sent to the Durham Emergency Communications Center – which has installed special software that recognizes that a text message sent to 911 is almost always an emergency message. Thanks to these changes, a text message sent to 911 by a Verizon Wireless subscriber within Durham is routed to the appropriate call center. Both the city's communications center and Verizon are using Intrado systems to handle the messages.

Calls from cell phones to the center are accompanied by the caller's phone number and an approximate location (based on the nearest cell tower). However, text messages are not routed through the Verizon Wireless enhanced-911 infrastructure in the same way, spokeswoman Debra Lewis wrote in an e-mail. For that reason, a text message sent to the 911 call center would not automatically be recognized by Verizon as an emergency message, so the location information would not be sent.

However, when a message comes in on Durham's Intrado next-generation 911 system, an icon on the dispatcher's screen lights up and the dispatcher hears a ringing sound. Clicking on the icon retrieves the message and begins the exchange. "The

first question … [the dispatcher] will ask is 'Where are you?'" said James Soukup, emergency communications director for Durham. "Unless [the callers] tell us that, we can't help them." When the caller does provide his or her location, the dispatcher will then ask for additional details from the subscriber to pass on to responders.

Prior to starting the public pilot program, the Durham Emergency Communications Center conducted internal testing that evaluated a number of scenarios – including one on how to handle multiple text messages received simultaneously (or nearly so) and what impact that could have on response. "Will it just take us longer to respond if you are No. 30?" Soukup asked. That is "one aspect" of the situation for which the evaluation is seeking answers, he commented.

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Wisconsin
Launches Statewide Piloting Patient-Tracking System

The Wisconsin Department of Health Services (DHS) is ready to start a statewide pilot program of a new Web-based patient tracking system that officials say will help in the reunification of survivors of mass-casualty incidents – e.g., the recent shootings in Norway and the tornado several months ago that devastated Joplin, Missouri – with their family and friends. The system will facilitate the early notification to friends and family members of information about the conditions and whereabouts of patients.

Those who are injured or killed in such incidents "may not have identification on them, [or] they could be unconscious," said Denny Thomas, co-chairman of the leadership committee of the Wisconsin Hospital Emergency Preparedness Program (WHEPP). "This is one way for family and friends and everyone [else] to keep track of these patients."

The way the program works is relatively simple: Emergency medical technicians attach an armband on the patient that contains certain basic identifying information, such as the person's gender and approximate age. The band is then read by a scanner, and the information can be used to track patients as they receive care at various stages and/or in different facilities of the overall emergency-response process.

The statewide pilot is expected to begin in the next month or so and run through the remainder of 2011. During that time frame, several exercises are scheduled in each region of the state to thoroughly test the system before WHEPP recommends that it be approved for use in the state's 136 hospitals. "None of this is mandatory," said David Seebart, project coordinator of WHEPP's Region three. "We are looking for cooperative effort, and we want to give … [the state's citizens] as good a system as we can in hopes that they agree with us that it is a good system and incorporate it."

The patient tracking system under consideration is part of WI-Trac, the resource tracking, alerting, and communication system used during emergencies by hospitals, public health facilities, and other responders in the state. WI-Trac also is used for inter-hospital communications, usually to determine bed capacity, request resources, and obtain other information helpful not only in emergencies but in routine daily operations as well.

WI-Trac already has helped in the responses to a number of large-scale disasters, including the 2009 H1N1 outbreak – when it was used to locate a particular kind of ventilator needed by a patient in a Green Bay hospital. That hospital queried several nearby hospitals using WI-Trac and received three responses within 15 minutes from hospitals that did have the requested equipment. Receipt of that information saved the Green Bay hospital itself from having to commit staff to individually call each and all of the hospitals in the area to inquire about the ventilator.

Adam McLaughlin, CEM, MS, MPA, is the operations manager for Elizabethtown Gas, an AGL Resources Company that delivers service to approximately 273,000 residential, business, and industrial natural gas customers in New Jersey. He previously served, for over six years, as the manager of emergency readiness, Office of Emergency Management of the Port Authority of New York & New Jersey. His responsibilities in that post included the development and coordination of Port Authority interagency all-hazard plans, and the design and development of emergency preparedness exercises. Prior to assuming the Port Authority post, he served in the Army for 10 years as an infantry and military intelligence officer; he is a combat veteran of Afghanistan.

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