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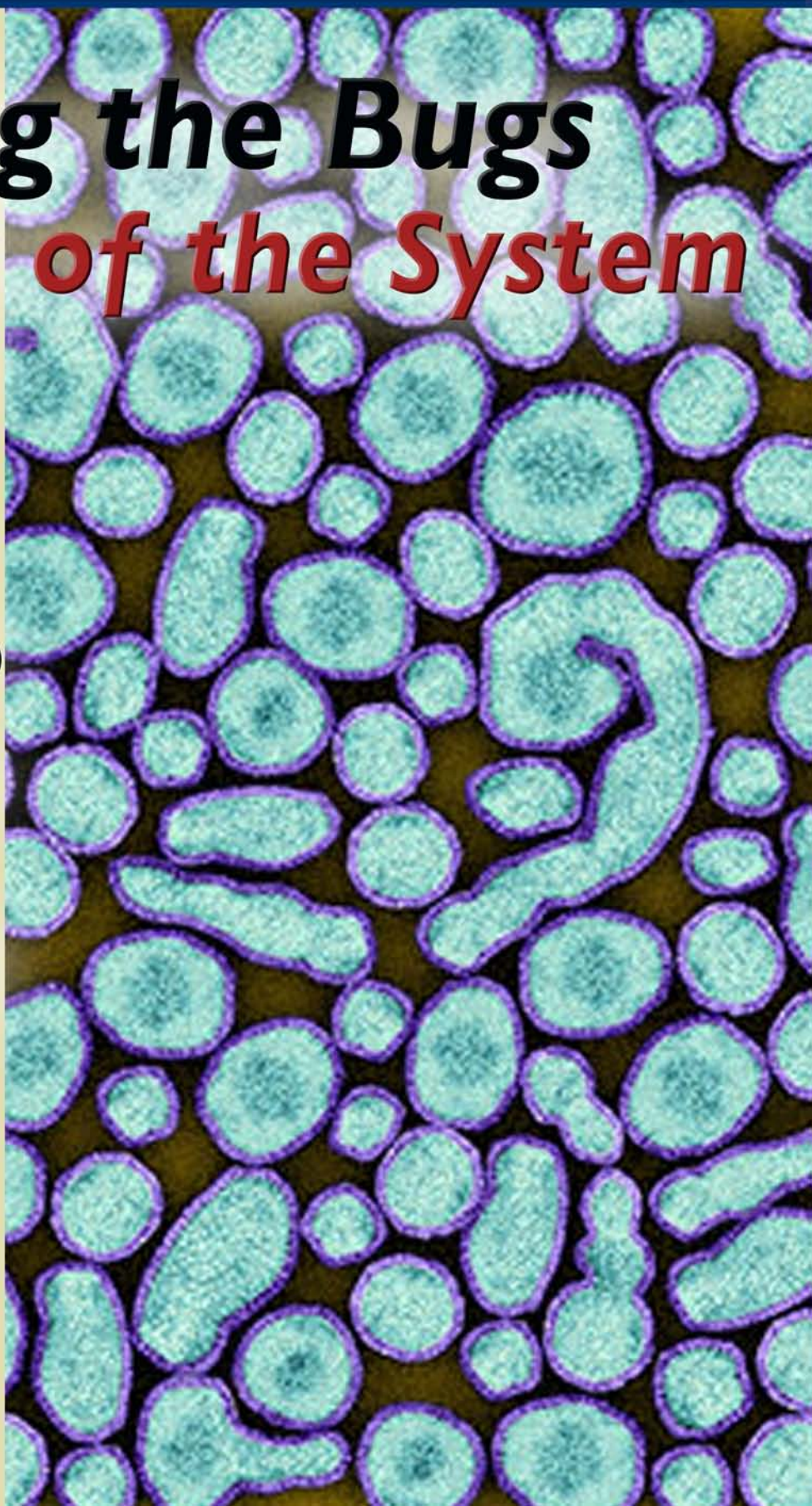
Getting the Bugs Out of the System



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Publisher's Message

By Martin (Marty) Masiuk, Publisher

At a time when there has been increasing criticism on Capitol Hill – from some Republicans as well as many Democrats – about various aspects of the continued U.S. presence in Iraq, it is interesting that no member of Congress has suggested in any way that there should be a U.S. withdrawal from the global war on terrorism.

Just the opposite, in fact. The Department of Homeland Security, FEMA (the Federal Emergency Management Agency), and other DHS offices and agencies have been taken to task – justifiably, in at least some cases – for various alleged fumbles and inefficiencies. But the general consensus of the congressional committees that control DHS funding seems to be that more and better-targeted homeland-defense programs are necessary, additional funding should be provided for many current programs, and more people should be hired to fill the billets still vacant on the homeland-preparedness personnel roster.

That apparently is the view also held by most of the American people. Prior to the 9/11 attacks the threat posed by international terrorism was a minor blip on the public consciousness. Now it always ranks at or close to the top of the numerous lists of "major concerns" developed and publicized by the nation's think tanks and research organizations.

All of which is relevant to an informed understanding of the many and multifaceted political debates going on this year not only in Washington but in every congressional district of the country. In the field of national defense, it can be taken for granted that even those who support an early withdrawal from Iraq, and who are most critical of the administration's defense policies, will still say – quite properly – that they "support the troops." Similarly, those who criticize various DHS programs and initiatives will usually agree with the administration's *objectives* – but may disagree vehemently with some of the procedural and/or regulatory steps taken to achieve those objectives. Another complaint will be that the administration is moving too slowly in some areas, or in implementing certain programs.

DPJ has no intention of joining in the political debate. We hope to play our own small part, though, by helping to keep readers better informed about the specifics of various policies, programs, and problem areas – while also offering some possible *solutions* to the various problems discussed in each and every issue.

This issue provides a good example of that policy. Navy Commander Duane Caneva, an exceptional talent recently added to the *DPJ* roster of working professionals who can also write well, discusses the need for a workable national plan to provide the medical support required, in massive quantities, in future times of disasters affecting the U.S. homeland. Brent Bankus reports on a major U.S. Army realignment that will make more military personnel available for homeland-defense missions when they are most needed. And the always reliable Joseph Cahill judiciously points out that the nation's first responders – the front line of defense in domestic disasters – also must be defended when disasters strike.

Your comments on these and future articles will be much appreciated. Thanks for logging on.

Cover: This image (provided by Dennis Kunkel Microscopy Inc.) of the Human Influenza virus Type A expresses metaphorically a small part of the current U.S. homeland-defense dilemma: too many vulnerabilities in too many areas, a malevolent and persistent - but often invisible - enemy, and a large number of only partial, costly, and frequently temporary solutions. (www.denniskunkel.com)

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Rx: A Medical Support Plan For Homeland Defense

By Duane Caneva, Public Health

The National Response Plan (NRP), National Incident Management System (NIMS), and National Preparedness Goals spell out the general rules for dealing with future terrorist incidents and/or natural disasters on U.S. soil. States and cities throughout the nation have followed through with more detailed, and considerably more specific, plans for protecting their own communities and their own citizens, as have various first-responder organizations and associations.

Ensuring the availability of adequate medical support in times of national disaster is one of the most important components of all of the readiness plans developed to date at any level of government, but for various good and understandable reasons that support cannot be guaranteed either now or in the foreseeable future. Simply identifying the types and quantities of medical support likely to be required is a massive challenge in itself. Even after that has been done, though, the real-time management of the medical resources available will be an even more difficult task in future times of disaster on the scale of the 9/11 terrorist attacks or Hurricane Katrina. As a minimum, information-management tools that are both simple and elegant will be needed simply to keep track of what response teams are available, what capabilities those teams have, and what additional resources are needed.

Even that information will not be enough to deal with truly major disasters – for which, it has become apparent, a *national* medical-support plan will be required. The creation of such a plan, though, requires the use of a systematic approach that provides the basic organizational structure on which more complex components can be built. Among the more important building blocks of that structure should be detailed capabilities-based plans (accompanied by a capability-classification scheme and a clear definition of the medical capabilities and resources needed to meet various types of disasters); a wiring diagram showing the hierarchical layers of management likely to be needed; reasonable and detailed standards for compliance and assessments; guidelines for continuous improvement as the plan matures and experience accumulates; and a workable program-management scheme that assigns specific responsibilities – and authority over resources – to specific individuals at every level of government.

Varying Levels of Capability

Medical support necessarily begins at the baseline-capability level. First receivers or responders at that level can and should be grouped into squads in accordance with their own functional response capabilities (the requirements for and definition of which should be standardized throughout the organization). The baseline squads can be grouped into larger teams to provide a larger and more flexible tiering of capability when more of that particular capability is needed – but the initial squads will still represent the smallest unit size that can provide a given capability in a mass-casualty situation.

If additional capability is needed, adjacent squads or teams can be mobilized under mutual aid agreements and/or regional compacts, or by the federal government (in response to a NIMS-level tasking). Assimilation into the system will necessarily require compliance with the standards defining the capability.

The next step should be to ensure that the readiness metrics of response teams are defined, adhered to, measured, and

reported to and through the appropriate organizational command chains. During preparedness or response operations, these metrics will usually be the key to ensuring that the most judicious risk-management decisions are made. For example, although one team may be farther away from an incident site, it may be more operationally ready than a team that is geographically closer, and thus would be a better choice to employ in the response.

Without defining and standardizing readiness objectives and requirements, such preparedness and response decisions cannot be made. In emergency management, the intelligent use of available assets requires first knowing the current status of those assets, and then assessing the risks involved in using them across a "capabilities gap" to meet operational requirements. Identifying critical informational factors in the preparedness phase, then monitoring those factors during the response phase, provides greater knowledge and permits faster and more effective action.

Pragmatism Vs. Conjecture

Capabilities-based planning also provides the foundation for a strategy that can be adjusted to rapidly changing situations. Identifying what might reasonably be achieved with current resources allows pragmatism to overcome the analysis paralysis sometimes experienced in the "what if" approach used in scenario-based planning. Essentially, by defining capabilities at the functionally elementary (i.e., squad) level and defining standards at a national level, capabilities can be developed on a national scale, adequately spread-loaded throughout the nation and achieving economies of scale not otherwise possible. More important than the basic personnel, equipment, and training, however, are the much more detailed attributes necessary in the design specifications set for these squads.

Resource typing to standardized specifications provides the foundation for other critical components in the system design. The development of a classification scheme for capabilities allows a linkage to requirements and to scenario-based planning. Linking such factors as emergency support functions and programs – e.g., emergency management, force protection, and critical infrastructure – to specific types of hazards (earthquakes, tornadoes, WMD attacks) and then identifying the specific capabilities required for various types and levels of response allows for regional differences in hazard typing.

The availability of adequate medical support in times of national disasters is one of the most important components

It is a given that, if an incident requires more capability than is available locally, mutual aid agreements, regional compacts, and/or national-level resources can be used to identify and provide the additional assets needed. Capabilities become commodities, in effect – the tools, in other words, with which response plans, concepts of operations, and mutual-aid agreements can be developed and implemented.

Hierarchical layers of management recognize and demonstrate the different command chains – operational and administrative as well as tactical – required for the optimum use of personnel and capabilities. From the single-unit first-responder resource to the federal level, all layers must be recognized and accounted for in a national plan, and a "theory of relativity" should be both applied and understood. Time, to use but one example, is often measured in longer intervals at the federal level, where the rotation of response teams into and out of an incident-response area may be for days or weeks, with response-and-recovery operations measured in months or years. At the first-responder level, however, time might well be measured in minutes or even seconds. Critical life-saving decisions occur at *all* layers of the hierarchy, though – and may cause or lead to higher-order effects that ripple out in unpredictable ways.

Judicious Yardsticks And Periodic Assessments

The use of system metrics permits a meaningful comparison of capabilities. The defining of capability standards and attributes allows the development of reliable metrics for readiness and preparedness. By attaching score values to the various program standards established for each capability, a quantitative measure can be obtained. The ability to quantify the readiness of a squad, and to measure the specific factors comprising its readiness, gives incident managers the yardstick they need to carry out their consequence-management and risk-assessment tasks more judiciously.

It is not always necessary that every capability of every squad be at the 100 percent level of readiness. But it is mandatory that on-scene commanders know the specific readiness capabilities of the squads under their jurisdiction. For that reason and others, there should be reliable checks in place to ensure the fidelity of reporting within a system. Periodic assessments of performance as well as capabilities allow for a more advanced analysis of the system. An understanding of such intangibles as how readiness is related to effectiveness, and identification of the key factors contributing to improved performance, also is helpful. Ultimately, though, the standards established should be evidence-based rather than the consensus-based "best practices" criteria currently used.

The continuous-improvement guidelines referred to earlier would formalize the process of converting after-action reports and other data into lessons learned – each of which should be logged, with date/time groups included, the process or program standard it is linked to, and the change or changes recommended. When evidence cannot be gathered or is simply not available, a qualified consensus recommendation must be judiciously developed.

Program management addresses the business rules needed for the system and the real-time management processes that should be followed. The development, adjustment, and application of system metrics, various measures of effectiveness that might be applicable, the lessons learned, and the best practices involved require a diverse mix of medical and non-medical disciplines and inputs.

As the information age matures, the significance of the medical-support data accumulated, and the management of that data, can play a significant role in developing and managing the medical support capabilities required to deal with the problems encountered in all phases of a major homeland-security incident. A data point assimilated into a well-designed information-management system may provide critical knowledge on many matters not even remotely related to the incident during which the data point was developed and defined. In a similar fashion, current as well as future assets in the U.S. medical-industrial complex may be used in various homeland-security applications not yet even being considered.

Commander Duane Caneva (Medical Corps), USN, is head of Medical Plans and Policy at the Navy Medicine Office of Homeland Security, and a medical consultant on chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) matters to the Office of the Attending Physician at the U.S. Capitol.

EMS Hazardous Duty: Not for the Meek

By Joseph Cahill, EMS

The first priority of those involved in emergency-response operations, necessarily, is to ensure the safety of the first responders themselves. To ensure that is done, particularly during a HazMat (hazardous materials) incident, requires both appropriate training for EMS (emergency medical services) teams and all other response personnel involved, as well as the right equipment – and enough of it.

The traditional EMS role is to take victims to the hospital – after first rendering whatever care is necessary both at the scene of the incident and en route to the hospital. EMS personnel – who usually are assigned to the operations section of the on-scene ICS (Incident Command System) – routinely carry out that assignment at any incident to which they have been summoned.

This EMS role on-scene is (or should be) performed entirely in the "cold zone" – i.e., an area believed to be free of contamination – and for that reason the personal protective equipment (PPE) worn by EMS personnel is the same as that worn while treating trauma victims or ill patients. It is mandatory, in HazMat incidents, that all patients be decontaminated *prior* to coming under EMS care, because their PPE does not protect against hazardous materials.

EMS Support For HazMat entry

EMS resources that are reserved for protection of the HazMat team members themselves should be considered "assigned." This means that, if requests for additional resources are made (for patients or other first responders, for example) to the staging area, the EMS teams allocated to supporting the HazMat operations remain assigned. Reflecting their status, the EMS personnel carrying out their duties at the scene of the incident are assigned to the ICS's medical support unit.

Pre-entry screening for team members is essential to ensure that those members are fit to endure the stresses of entry. Many HazMat teams have members who have been specially trained to carry out these evaluations. Although the skill sets needed to perform the screenings are well within the abilities of an emergency medical technician (EMT), the criteria for entry approval and the issues related to these decisions may not be part of the EMT training. Pre-incident training of the EMS staff – and/or written guidance – would easily overcome this potentially troublesome issue.

Train for the Hot Zone work in the Cold Zone

The Zone of Maximum Peril

The EMS support of the HazMat team's work may be performed in either the cold zone or the warm zone. The latter – which encompasses any decontamination areas that have been established – serves as a transition area between the hot and cold zones. As with the tasks previously mentioned, the PPE sets that are routine supplies on an ambulance should be sufficient for the work carried out in the cold zone. EMS personnel, who have the appropriate training, and the additional PPE gear needed, also can operate in

the warm zone providing care during the decontamination process.

The establishment of entry criteria for stabilization of injuries within the hot zone, the area considered contaminated (including areas where contamination may spread), is an evolving mission for EMS. It is important to recognize the limitations that a contaminated environment imposes on the delivery of care. Only those treatments that are critical to patient survival and cannot wait for decontamination – and/or will not worsen contamination of the patient – should be attempted in the hot zone. The EMS resources assigned to this task should be considered part of the HazMat group under ICS.

To the members of many other specialized units – e.g., police tactical entry teams, and urban search and rescue teams – the value of having EMS support available for the team up front has become more and more apparent. HazMat incidents are no exception. It is critical to recognize not only that all of these teams are trained and equipped to operate in hazardous environments, but also that their front-line EMS support teams must be similarly trained and equipped.

Army Focuses Inland in Latest Realignment

By Brent Bankus, Military Support

For the past several years the U.S. Army has been restructuring its maneuver forces and command-and-control headquarters to be more responsive to the full spectrum of operations confronting the U.S. military. That spectrum ranges from peacekeeping and nation building – e.g., in the Balkans and the Sinai – to counterinsurgency operations (such as those being carried out in Afghanistan and Iraq) to responding to natural disasters such as Hurricanes Rita and Katrina.

The restructuring process of the U.S. Army's tactical units (e.g., maneuver units) particularly affects the First and Fifth U.S. Armies, both of which have been restructured to meet the 21st-century needs of the Department of Defense (DOD) and the U.S. Army. Heretofore, First Army's missions included the training of Reserve Component (RC) units for either war or peacetime assignments. From its headquarters in Fort Gillem, Ga., the First U.S. Army's operational boundary had been the states east of the Mississippi River. The U.S. Fifth Army, headquartered in Fort Sam Houston, Texas, was assigned similar missions in states west of the Mississippi.

In a landmark move, the roles of the two organizations were officially changed on 16 January 2006. The First Army will now have training, validation, and mobilization responsibility for all RC forces, including those in the Virgin Islands and Puerto Rico. It also will support the RC modularity and the Army's "Force Generation" process, also known as ARFORGEN. The ARFORGEN goal is to provide a smaller, more self-sufficient, readily deployable force that not only can be easily combined with other Army and Joint forces capable of full-spectrum operations, but also provide greater predictability for Army units.

New Home-Front Responsibilities

This modular restructuring process fundamentally changes the U.S. Army's conventional maneuver force from one based on infantry or armored divisions of the WWII and Cold War eras to one reminiscent of the smaller regimental combat team and separate infantry brigade concepts – of the 1950s and 1980s, respectively – with organic support units.

The principal command-and-control relationships of the organizations will not change, though. First Army will continue to report directly to the U.S. Army Forces Command (FORSCOM) headquartered in Fort McPherson, Ga. As part of the ARFORGEN process, FORSCOM has directed First Army to serve as a multi-component headquarters with RC training and readiness oversight responsibilities.

Because it now sprawls over a much larger geographic area, First Army will have two subordinate division headquarters – one in the western United States and one in the east – to provide command and control of the support brigades responsible for training the Army's reserve forces. Conversely, the Fifth Army (now also known

as ARNORTH) has been assigned as the Army Service Component Command of the U.S. Northern Command (NORTHCOM). In that role, ARNORTH supports NORTHCOM in that command's increasingly important homeland-defense and DSCA (Defense Support of Civil Authorities) missions.

Closer Ties With FEMA Regions

Fifth Army/ARNORTH, which has been directed to be fully operational by October 2006, is currently focused on such high-priority issues as the acquisition of personnel, equipment, funding, and other resources. Using the lessons learned from dealing with Hurricanes Katrina and Rita, staffing models are being developed to establish manning documents, training plans, and equipment requirements to ensure that the organization is properly prepared from the outset to execute its primary DSCA and homeland-defense missions.

Fifth Army/ARNORTH will maintain two task-force operational headquarters to ensure proper oversight. In addition, as part of its new mission set, it also has established liaison positions – defense coordinating officers – in each of the 10 FEMA (Federal Emergency Management Agency) regions. The liaison officers will be responsible for the coordination of state and federal requests to NORTHCOM for military support.

In another of its new mission requirements, Fifth Army/ARNORTH also will be responsible for the training, certification, and oversight of the National Guard's Weapons of Mass Destruction Civil Support Teams (WMD-CSTs). Under the WMD-CST concept, which was developed and implemented in the mid to late 1990s, the National Guard created and trained a number of 22-man teams that were specifically designed to assist the nation's first-responder communities in the aftermath of a national incident or event involving WMDs.

The first 10 WMD-CST units were based in California, Colorado, Georgia, Illinois, Massachusetts, Missouri, New York, Pennsylvania, Texas, and Washington. There are now 34 certified WMD-CSTs, with 21 more teams being fielded. These units are federally resourced, trained, and exercised. Under the oversight of Fifth Army the teams will be expected to be ready to deploy rapidly – usually within 4-8 hours – to: (a) help local incident commanders determine the nature and extent of an attack or incident; (b) provide expert technical advice on WMD response operations; and (c) support the arrival of follow-on state and federal military response assets.

Fifth Army, as the Army Component Command for NORTHCOM, will now be much more involved in providing support to civil authorities. Under the new organization, the defense coordinating officers and their staffs will be co-located within the 10 FEMA regions. ARNORTH will train the units under it to work with FEMA and other government agencies to lessen the loss of life, and reduce property damage, in future times of disaster. The restructuring and reorganization is expected both to improve prior planning and preparation and to ensure a more efficient, expeditious, and effective response when DOD support to civil authorities is required.

Illinois, Oklahoma, and Connecticut

By Adam McLaughlin, State Homeland News

Illinois Conducts Simulated Bird Flu Exercise

Illinois public health officials have completed the first of three discussion-based exercises designed to prepare the state to deal with a severe bird flu outbreak. During the first exercise, carried out last week in Springfield, representatives from the Illinois Department of Public Health considered the decision-making process that would be required to deal with a grim but hypothetical scenario in which 35 percent of the state's population – more than 4.4 million people – contract the avian H5N1 influenza within the first 12 weeks after it is first detected in the state.

Also discussed during the same exercise were plans to coordinate all plans and decisions with the Illinois Emergency Management Agency and the Illinois Department of Agriculture. Among the specific topics addressed were disease surveillance, the distribution of supplies of antiviral drugs and vaccines, and the strategies needed to contain transmission of the disease.

The next exercise, scheduled to be carried out in April, will include representatives from a number of other agencies, and will focus on the allocation of scarce drugs and other resources in the event of a bird-flu emergency. The third exercise, in May, will bring in senior government officials to review the plans already in progress and to discuss other issues that have not at that time been resolved. "The focus is to determine who … [will be] making decisions and what … those decisions [are] going to be," said Daniel Lee, pandemic flu preparedness coordinator for the state health department.

The underlying scenario assumes that at least 69,000 patients – about 1.5 percent of those infected – will be hospitalized for an average of seven days, even if only the most seriously ill are admitted. Approximately 20 percent of those patients will need intensive care, the scenario also assumes, and about 44,000 of them will die.

Oklahoma Establishes Five Regional HazMat Response Units

The cities of Norman and Moore are the latest recipients of specially equipped 43-foot-long trucks specifically designed to assist emergency workers in responding to natural disasters, chemical spills, or terrorist attacks. In all, five Regional Hazardous Materials Response units, as they are called, were delivered throughout the state, with Tulsa, Oklahoma City, and Lawton/Claremore receiving the other three units.

The vehicles, presented to Norman and Moore earlier this month, cost $446,000 each and are fitted with $300,000 state-of-the-art equipment suites. Computerized command centers, satellite communications systems, infrared substance monitors, splash suits, and breathing masks are among the more important equipment items provided. The vehicles were paid for through a grant from the U.S. Department of Homeland Security.

"The Regional Response System was designed to provide every Oklahoman a level of security and peace of mind," said Oklahoma Homeland Security Director Kerry Pettingill. "The large HazMat units are strategically placed along the Interstate 44 corridor," he said, "… to allow for a quick response statewide."

State officials said that the entire system will be standardized to ensure that each unit will be compatible with the others. In addition, there will be an interoperable communications system on the Intermediate and Large HazMat units that will operate in conjunction with the state's 800 MHz radio system. That combination, officials said, will upgrade and facilitate the state's communication abilities during future disasters – e.g., new wildfires on the scale of those that Oklahoma firefighters have been battling since October.

Connecticut Conducts Simulated Chemical Release, Bomb Threat Exercise

On Monday of last week (13 March), approximately 180 emergency responders participated in a disaster exercise at the Westfarms Mall which combined a simulated chemical gas release and a follow-up bomb threat.

The exercise started at 7:30 a.m. when the mall's security office received a call that "someone" was having trouble breathing in a men's restroom. Arriving at the restroom, guards saw a vaporizer on the counter and, in the same vicinity, a note taped to a mirror. The note said "You have found the breath of death, now look for two, for it is for you." The "two" apparently referred to a second threat, which responders later determined was a bomb.

The mall falls under the jurisdiction of two adjoining communities, Farmington and West Hartford, so fire departments from both towns participated in the drill. The purpose of the exercise was to determine whether the mall's security personnel, working with local and state agencies, could do what they had been trained to do – i.e., recognize the situation, use their personal protective equipment, call for the additional personnel needed to deal with the threat, and work effectively with the other agencies involved.

The drill's organizers expressed satisfaction with the way the exercise had been carried out and said the scenario will be studied in close detail to determine what if any additional training might be needed to deal with similar but real-life situations in the future.

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