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Editor's Notes

By James D. Hessman, Editor in Chief

Nuclear weapons understandably receive the most publicity, but they are very expensive to develop, build, and deploy. Chemical weapons can kill almost as many people, and cost much less. Biological weapons, though, according to most scientists, senior decision makers, and public-health professionals – at all levels of government – pose the greatest threat to mankind both now and for the foreseeable future. They are invisible, insidious, and extremely difficult to detect and destroy.

They also are long-lasting, and exceptionally mobile. In the interconnected world of the 21st century a lethal pathogen surreptitiously spread among a small group of guests at a cocktail party anywhere in the United States today could easily be interstate by tomorrow and the day after that become the start of an international pandemic infecting, and affecting, all nations throughout the world.

This month's printable issue of *DPJ* focuses primarily on the need to quickly, and massively, expand and improve U.S. biopreparedness capabilities – but also includes several closely related articles on: (a) the importance of rapid communications in *any* type of mass-casualty incident or event; and (b) the grim aftermath of dealing with the sudden death of large numbers of people, particularly when there is evidence to gather, the remains of countless bodies to be examined and identified, possible crime scenes to be investigated, families to be consoled, and – most important of all – lessons to be learned.

Dr. Frank Saul sets the tone with a remarkably comprehensive report on the little known but exceptionally important work carried out, at the scene of mass-fatality incidents, by the 10 regional HHS (Department of Health and Human Services) Disaster Mortuary Operational Response Teams. Diana Hopkins follows with a discussion of her aptly named "Hydra" of terrorism (which postulates that almost every advance in biopreparedness might also become a new opportunity for bioterrorists). Raphael Barishansky discusses the evolution of public health in general, and stresses the need for greater emphasis on emergency preparedness in particular.

Complementary articles by Kate Rosenblatt and Barry Kanne provide a slightly brighter note by pointing out, respectively, that: (a) the U.S. Strategic National Stockpile (of medicines, pharmaceuticals, and medical systems and equipment) has become a major national asset – ready for rapid deployment, and immediate use, anywhere in the Continental United States in 12 hours or less; and (b) that the nation's "ham radio" community – hundreds of thousands of public-spirited volunteers – represents another major asset that has already saved countless lives in times of sudden crisis.

Also in this month's printable issue: Two chilling articles, by Dr. Neil C. Livingstone, on new anti-U.S. threats posed both by Al Qaeda and the government of Iran; an update by Rodrigo Moscoso on life-saving communications/data-sharing systems; a lessons-learned analysis, by Jennifer Smither, on what went right (and what did not) in the famous 2003 West Warwick (R.I.) nightclub fire; a case study, by Mary Lilley, on how Marin County (Calif.) developed and tested its H1N1 flu-preparedness plans; and an equipment-upgrade article by Joseph Cahill on the need for more, and better equipped, "Heavy Rescue" EMS units.

As always, Adam McLaughlin serves as cleanup hitter for the issue with incisive reports on recent homeland-preparedness events in Kansas, Oklahoma, Nebraska, Arkansas, and Washington, D.C.

About the Cover: Photo montage (by Susan Collins) illustrates the huge, and still growing, threat to the United States – and to all other nations in the world – posed by either a deliberate biowarfare attack by terrorists or by the outbreak of a naturally occurring biological pandemic of even greater magnitude.

DMORT Teams and Their Role in MFIs

By Frank P. Saul, Public Health

Disaster strikes – and there are more fatalities than local resources can manage. An operational definition of a Mass Fatality Incident (MFI) is "one more than local authorities can handle." The specific death tolls in MFIs that the nation's Disaster Mortuary Operational Response Teams (DMORTs) have responded to since 1993 range from 11 fatalities to almost 3,000.

Fortunately, DMORTs are now available to assist local authorities as part of the National Disaster Medical System (NDMS) of the U.S. Department of Health and Human Services (DHHS). When deployed, a DMORT works for the local coroner/medical examiner.

Public concerns and expectations following mass-fatality incidents – whether due to accidents, natural disasters, or terrorist activity – have resulted in the increasing application of forensically based multidisciplinary approaches to managing victim identification and other aspects of the incident, including evidence recovery.

That change is reflected in the composition and organization of the ten U.S. regional DMORT teams, which provide varying levels of assistance to local coroners/medical examiners – who still possess legal responsibility for control of the victims' remains. Typical DMORT teams are composed of forensic anthropologists, odontologists and pathologists, medicolegal investigators, computer specialists, and other support personnel, in addition to the morticians who first voiced concern about the proper care of victims, and who serve as the organizational backbone of the DMORT concept.

DMORT team members are intermittent federal employees who leave their "day jobs" when activated during MFIs. The types and numbers of personnel deployed to a specific MFI vary with the availability of local resources and the number of victims. The basic approach to handling an MFI is likely to be similar, however, starting with:

- The recognition, recovery, and documentation of victim remains and associated evidence at the scene of the incident. These scenes have varied from rural flooded cemeteries to airplane crashes; from fields, forests, and tropical Pacific settings to both the Atlantic and Pacific Oceans; from an Amtrak train crash in a small town to large regional areas devastated by natural disasters including tornadoes and hurricanes (Katrina, for example); and, of course, to terrorist incidents, large and small, involving such sites as the Murrah Federal Building in Oklahoma City, and New York City's World Trade Center – the latter immediately becoming the largest crime scene in U.S. history. Climatic circumstances also have ranged widely, from a wind-chill temperature of 48 degrees below zero Fahrenheit with snow and ice in Monroe, Michigan, to over 100 degrees Fahrenheit combined with "super typhoons" on Guam.

- The selection of a site for, and establishment of, a Family Assistance Center (FAC) to aid in the acquisition of victim antemortem information, while also providing progress reports for victims' families. Hotels where out of town kin can be housed

while receiving and providing information have been very useful for this purpose.

- The setting up and staffing of an Information Resource Center (IRC) to receive, process, and manage the antemortem and postmortem victim data. The latter usually is obtained by forensic specialists from the remains themselves at the morgue. DMORT computer programs are used for data processing. Forensic specialists will attempt to positively identify the victims by comparing the morgue data with the computer data.

- The selection of a site for, and establishment of, a temporary Incident Morgue (IM) for the processing and identification of recovered remains. Local authorities have sometimes made use of school facilities, but this should be avoided, because such locations are likely to become "tainted" in the eyes of local residents. Medical-examiner offices, military facilities, airport hangars, and warehouses also have been used, and rented tent-like structures with appropriate utility attachments have shown great potential for future use.

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DPMUs, the Disaster Scene, And NTSB Involvement

The work at each of the above locations is facilitated by the use of what are called Disaster Portable Morgue Units (DPMUs). The typical DPMU is stocked with a broad spectrum of supplies and equipment including gurneys, personal protective equipment, remains examination tools, and computers as well as digital full-body and dental x-ray equipment. All DPMU equipment owned by the federal government is palletized and ready for immediate deployment, by air or overland transport, to incident locations. There are presently one DPMU on each coast, and one in Texas. Specially trained personnel travel with the DPMU to set up, maintain, and later return the DPMU to its point of origin.

Team members often aid in the recognition and recovery of remains and associated evidence while also documenting their location. However, as mentioned above, the disaster scene itself remains under the control of the pertinent local, state, or federal jurisdiction. Many disaster scenes also are considered crime scenes, and thorough documentation – followed by continuing documentation when the remains are processed at the morgue – avoids the types of mistakes that may hamper criminal and/or civil proceedings. Documentation has become even more important in recent years because of concerns about possible terrorist activity. The FBI's Evidence Response Teams (ERTs) also have become increasingly involved.

While emphasizing the forensic aspects of documentation it should not be forgotten that the National Transportation Safety Board (NTSB) and other agencies are charged with determining what specifically went wrong in accidents involving aircraft and/or other modes of transportation so that, in addition to helping to assign legal responsibility, those agencies also are involved in the effort to prevent future accidents.

An Inside Look at the Family Assistance Center

The Family Assistance Center (FAC) is an integral part of any mass-fatality response. The FAC serves several purposes. It serves, for example, as: (a) A central location where family members of the deceased can provide antemortem information on the victim, such as a detailed physical description, dental records, medical information, and DNA reference samples; and (b) A convenient meeting place where the families of victims can receive accurate, timely information regarding victim identification – and have their own questions answered.

In the case of aircraft accidents, the Aviation Disaster Family Assistance Act (the legislative "bible" for such accidents) places responsibility for running the Family Assistance Centers on the National Transportation Safety Board itself – which has available a small cadre of well trained DMORT members to help provide FAC support.

Family members can assist in the identification of their loved ones at the FAC by providing information about the victims. Antemortem information about clothing, jewelry, physical

characteristics, medical and dental procedures, and health history is collected for comparison with similar postmortem information derived from the victims' remains. The FAC is usually where the process of locating and obtaining victim antemortem dental and medical radiographs and related information is initiated. It is also where family members usually are interviewed – by funeral directors who are accustomed to working with grieving families.

Many of the interviewers also have backgrounds in mental health and/or social work. DMORT has recognized the important nature of this work by forming a Family Assistance Center Team (FACT) that provides a cadre of highly trained and experienced interviewers.

Information Resource Centers And the Incident Morgue

The Information Resource Center (IRC) uses a software Victim Identification Program (VIP) that has evolved in relation to each incident. The IRC usually will be set up in an area with close access to the morgue work area, and a separate data-entry area may be set up at the FAC for the input of antemortem data; the data gathered is then electronically transferred to the IRC. After all antemortem data has been collected and entered, a careful search of the accumulated data is carried out, using the postmortem data points as the primary basis for the searches. Under no circumstances, it should be emphasized, does the VIP program make an identification per se; what it does do, and very competently, is narrow the number of possible matches that must be checked scientifically.

The other important piece of software that will be running in the IRC is the WinID program, which is used to match dentition in the Dental Section.

The Incident Morgue (IM) is used for all postmortem examinations. Morgue operations are modular in organization and can be modified to address the needs that become obvious during and after a specific disaster. The morgue layout is standardized, though, with an organized flow of the remains from initial documentation to postmortem examination to identification to release.

After being taken into the morgue, victims' remains pass through a triage process to remove: (a) unidentifiable material; and (b) material considered to be unsuitable for DNA testing. The remains of each victim are assigned both a number and an escort person – to ensure continuity of both the evidence chain and the documentation of victim remains and personal effects. The documentation includes both photographic and radiographic recording of the remains. All remains also are photographed before they move through the morgue process.

Pathology and Other Medical Specialties

Immediate incident-scene radiographic documentation is needed to locate airplane parts as well as other foreign objects that may be a hazard to personnel and/or be needed by the NTSB or FBI for their analyses. Radiographs also are used to record loose teeth, medical/surgical devices, and unusual or otherwise distinctive characteristics of the remains that may aid in identification. Customary clinical views of the remains are taken for comparison with any antemortem radiographs.

As in normal practice, pathologists attempt to determine the cause and manner of death. The latter may seem simple in transportation and natural disaster incidents, but homicides *not* related to the crash or flood have been found by careful examination of the remains. Also, improvements in safety have come about as a consequence of determining the actual cause of death. For instance, the fact that death in some crashes was due to smoke inhalation rather than to the blunt force associated with impact has resulted in the use of fire-resistant materials for seating and interiors. Moreover, the notation of injury patterns can lead to design changes that can reduce future injuries and save lives.

In addition, pathologists describe remains and, if and when the condition of the remains allows, pathologists: (a) note the victim's sex (based on examination of the body's external and/or internal soft tissues); (b) make a rough estimate of the victim's age (as suggested by internal organs); and (c) record the presence of moles, scars (and their significance), tattoos, medical devices, etc. In a transportation accident, the pathologist is also required to take samples from specified crew members (of the aircraft or locomotive, for example) for analysis.

Other medical specialists contribute significantly to development of the overall postmortem process. A basic contribution of the forensic *anthropologist*, for example, in the standard forensic setting (coroner/medical examiner office) is to create a biographic profile based on a skeletal assessment of sex, age, ancestry, stature, etc. for the unidentified individual so that appropriate antemortem dental and medical radiographs can be obtained from a variably sized pool of missing persons for comparison. The biographic profiles also may include fleshed characteristics, if and when available.

In an MFI, the immediate need is to create biographic profiles for each set of remains, whether an intact body or a body fragment, so that when (and if) the antemortem radiographs arrive, potentially matching postmortem radiographs can quickly be made available for comparison.

The specific anatomical structure present (useful in re-associating separate units and called for in DNA protocols) and other descriptive information are also documented.

Antemortem and postmortem clinical-view radiograph comparisons are usually carried out by anthropologists – who also may use antemortem photographs of distinctive body features (i.e., ear form) in the same fashion, after first matching biographic profiles.

Forensic *odontologists* (dentists) locate and radiographically record the teeth, restorations, and other dental characteristics present in the remains. This information is compared to the antemortem dental radiographs (written records may not be accurate) obtained through the FAC. (Historically, dental identifications have accounted for a majority of identifications of disaster victims.)

Fingerprinting, DNA, & Returning the Remains

When available, fingerprints are usually handled by specialists from the FBI Disaster Squad. DNA evidence also has become an important tool for both positive identification and the re-association of remains. Just as in other identification methods, DNA requires the use of postmortem samples and antemortem or family reference samples. DMORT has adopted the protocols of the Armed Forces DNA Identification Laboratory (AFDIL) for collection of postmortem DNA samples and victim and family reference samples. DMORT collects family and victim reference samples through the FACT.

After passing through the above stations – and others if and when required by special circumstances – the remains are stored in refrigerated trucks awaiting additional identification information and eventual release to the families. After a positive identification has been recommended by the forensic team, the final determination is made by the local coroner/medical examiner. The remains may then be embalmed by DMORT morticians prior to returning them to the next of kin, or they may be embalmed by local morticians selected by the next of kin. The process of releasing the correct remains to the proper funeral home is an exceptionally critical process demanding thorough documentation.

As the general public (specifically including victims' families) has become more sophisticated and knowledgeable about the forensic sciences – in part, undoubtedly, because of the popularity of several television programs focused on the forensic sciences – expectations have been heightened concerning the positive identification of victims in Mass Fatality Incidents. The role of DMORT, and its forensic scientists and support personnel, has probably for that reason alone become more important than ever before in responding to the needs of the victims' families.

For additional information related to the preceding article, click on: www.dmort.org; and/or www.hhs.gov/disasters

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Dr. Frank P. Saul is Associate Dean and Professor Emeritus, Anatomy, of the Medical College of Ohio, and also serves as commander, Region V Disaster Mortuary Operational Team (DMORT), of the National Disaster Medical System. Dr. Saul is also a forensic anthropology consultant to coroner/medical examiner offices in Toledo, Ohio, Detroit, Michigan, and other cities, as well as to the Cleveland (Ohio) FBI Evidence Response Team.

Biopreparedness and the Hydra of Bioterrorism

By Diana Hopkins, Standards

There are many factors that make biological warfare by far the most frightening type of a terrorist attack, and perhaps even the most frightening threat spawned by Mother Nature herself. For that reason both the Department of Homeland Security (DHS) and the Department of Defense (DOD) have spent billions of dollars on biothreat defense since the terrorist attacks of 11 September 2001 (and the anthrax incidents shortly thereafter). It would seem, therefore, a bit more than eight years later, that the United States would have reached a reasonably high state of biopreparedness by now. That is not the case, though. In fact, neither the United States itself, nor any other country in the world, can or should expect that it will ever reach such a state of readiness, if only because the parameters of bioterrorism are constantly shifting.

Some of the world's greatest scientific advances in recent years have been in the area of biotechnology. Scientists have learned, for example, how to manipulate and modify a seemingly endless array of microorganisms, via recombinant DNA techniques to improve standards of living through advanced applications in medicine, agriculture, and industry. However, the same technologies used to develop new therapies that end the threat of certain deadly diseases also can be used to create a new and ever growing "Hydra" of bioterrorism.

Ironically, advances in biotechnology almost automatically ensure not only the persistence but also the growth of bioterrorism threats. As humans build defense systems against such deadly pathogens as anthrax, smallpox, and botulinum, other pathogens are being just as quickly synthesized *de novo* that are not only more viral but also more resistant both to detection and to treatment. Like the multi-headed Hydra of Greek mythology, for each head that is removed, two more grow in its place. (In the end, of course, Hercules defeated the Hydra after finding out that only one of its heads was immortal – and he covered that for eternity.) Today, the best and perhaps only way to defeat the threat posed by bioterrorism is knowing how to develop and use the different types of defensive aids and techniques available to do so.

Prevention, Encouragement, Intelligence

When the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism met in Washington, D.C., last month (on 9 October), the commission members focused much of their attention on redefining, and refining, the *prevention* of bioterrorism, believing it to be fundamentally important to national security that the United States bolster its capacity to respond rapidly and effectively to a biowarfare attack.

In addition to advocating that the United States maintain its guard – the first prerequisite for prevention – the members also encouraged the nation's homeland-security community at large to make it increasingly difficult, anywhere in the world, for terrorists to obtain access to a broad spectrum of biowarfare agents, laboratory equipment, intelligence information, and – of perhaps the greatest importance – the funding needed to carry out their bioterror threats.

One aspect of "keeping up the guard" is promoting greater coherence within the biopreparation community, an important and sometimes overlooked resource, especially through the use of rapid communications and information sharing in order to alert all response sectors of suspicious occurrences of infections. Proactive epidemiological awareness, combined with rapid notification – within the community and to the population at large – by public health providers can usually prevent most if not all of the deaths caused by a bioterrorism attack, because even delayed-presentation diseases can be identified and quickly tracked and countered.

Another biopreparedness resource available for use in the global war against bioterrorism is the U.S. work in preventing the development and use of biological weapons by other countries. The U.S. "prevention umbrella" covers, but is not limited to, the surveillance and intelligence work focused on preventing the acquisition of materials, equipment, and information related to the development of biological weaponry. It also covers the containment of select agents as well as: (a) the implementation of more effective personnel reliability programs; (b) improved laboratory security; and (c) the better and more rapid sharing of intelligence. Microbial forensics is yet another rather new resource being used in the U.S. biopreparedness effort – an effort, not incidentally, championed by the White House Office of Science and Technology that will allow for improved forensic tracking of the dangerous microbes used by bioterrorists.

In retrospect, turning the tables on bioterrorism and *becoming* the Hydra – a Hydra of prevention – may perhaps be the best tactic for the United States to use in developing and expanding its biopreparedness capabilities. In that way, no matter what approach is used by would-be bioterrorists, a multiple-front response will be ready to counter it.

Diana Hopkins is the creator of the consulting firm "Solutions for Standards" (www. solutionsforstandards.com). She is a 12-year veteran of AOAC INTERNATIONAL and former senior director of AOAC Standards Development. Most of her work since the 2001 terrorist attacks has focused on standards development in the fields of homeland security and emergency management. In addition to being an advocate of ethics and quality in standards development, Hopkins is also a certified first responder and a recognized expert in technical administration, governance, and process development and improvement.

Mortuary Services and The Lessons Learned From Real-Life Tragedy

By Jennifer Smither, Public Health

Any time a mass-casualty incident occurs, responders must not only save the living but also process the dead. Typical mortuary services include, among other responsibilities, removing and transporting bodies from the incident scene, checking and confirming victim identifications, and notifying surviving family members. *Lessons Learned Information Sharing* has a wealth of information available on the mortuary services provided during and after many mass-casualty incidents, including The Station nightclub fire almost seven years ago in West Warwick, Rhode Island.

On 20 February 2003, a pyrotechnic show during a concert set fire to the ceiling and walls of The Station nightclub. The ceiling and wall materials were not fireproof, so the fire spread quickly throughout the crowded main room of the nightclub. Because there were only a few exits, there was a rush to and considerable crowding at the main exit, and many people had difficulty escaping the fire.

Police, fire, and EMS (emergency medical services) personnel from 35 state and local agencies in the West Warwick area responded to the fire fairly quickly. Still, out of the approximately 430 people believed to have been in the club at the time of the blaze, 100 died, and 230 others were injured.

Two-Way Radios Needed – Plus an After-Action Report

As part of the standard response, an investigator from the Office of the Medical Examiner (OME), which is responsible for removing bodies from the scene of such incidents, drove to the site about 30 minutes after the fire, unaware of the still mounting casualty numbers. Unfortunately, the OME vehicle did not have a two-way radio installed, so the investigator's only means of communicating with the on-site responders already at the club was by cellular telephone – however, neither he nor the contracted livery service accompanying him had the telephone numbers of the responders who were needed. The investigator would have been better prepared to approach the scene, obviously, if he had been able to communicate through two-way radio while still on the way to the incident site.

Another problem occurred after the bodies had been removed and transferred to the state morgue – where OME staff members, representatives of the Rhode Island Funeral Directors' Association, and volunteer dentists spent five days identifying the dead. After all of the bodies had been identified, the chief medical examiner released all of the people involved in the identification process.

If the medical examiner had instead had held at least one after-action meeting with everyone who had worked on identifying the bodies, the OME could have developed some valuable lessons learned and used them to provide useful guidelines for volunteers involved in the processing aftermath of future incidents.

Following identification of the bodies, representatives of the Family Assistance Center (FAC) in the area had to begin the always difficult process of notifying families. Although they delivered the news with compassion and professionalism, many of the FAC staff members participating not only had no clinical training but also possessed very little, if any, experience in making death notifications. The lesson here, therefore, is that, to ensure that each victim's family receives the consolation and respect it deserves, the political jurisdictions involved should take whatever steps are needed to see that the individuals carrying out the death notifications have the training needed for that task.

Of course, such professional formal training can also help reduce stress on the people who are actually delivering the difficult news. Other family assistance centers may therefore want to at least consider using trained volunteers from local and state funeral directors' associations to provide the death notifications to the families of victims.

For additional information on The Station fire, mortuary services, or other emergency-management topics, visit Lessons Learned Information Sharing at www.llis.gov.

Jennifer L. Smither is the outreach and partnerships 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-response communities. Ms. Smither received her bachelor's degree in English from Florida State University.

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Expanded-Duty EMS: Heavy Rescue

By Joseph Cahill, EMS

Most people think of first responders as members of three well known services: the police department, the fire department, and an EMS (emergency medical services) agency – and these groups are, in fact, the mainstay of the emergency-response world without which the average American citizen would not enjoy the relatively safe way of life common today in the United States.

But there still are a very large number of unexpected and dangerous events and incidents that require more, sometimes much more, than the routine emergency response. A motor vehicle accident, for example, in which the driver cannot get out of his or her car – and outside help cannot get in, because the car is so seriously damaged that the doors have been crushed shut and cannot be opened. Or an assembly-line employee has fallen into or under a machine at work and is helplessly entangled. Or a building trench collapses and traps a construction worker under tons of dirt.

These and other frightening scenarios – which of course can and do occur in any community, large or small, in almost any country in the world – share three common features: (a) The victim/patient needs immediate medical care, and his or her chances of survival diminish in direct proportion to the time it takes to provide that care; (b) the workplace hazard that caused the alarm in the first place continues to exist – and now threatens both the patient and the rescuer; and (c) resolving the situation frequently requires the use of techniques, and the availability of equipment, not part of the standard training, or gear, for the line police, EMS technicians, or firefighters.

Each jurisdiction has specific needs; large cities may and probably will have certain additional needs, though, if only because they usually rely on commuter rail or subway systems to meet most of their transportation needs. On the other hand, rural agricultural communities usually are home to heavy farming equipment that poses specialized challenges and hazards. In short, no community is totally safe from sudden danger – in large doses.

An Unusual Blend: Airbags and Hydraulic Equipment

The Emergency Medical Services (EMS) system in Pittsburgh, Pennsylvania – one of the more forward-looking of those communities – has taken a leading position in the field of what might be called "heavy-rescue" work. Every paramedic in the system, for example, is required to have passed a "Basic Vehicle Rescue" course, which teaches the use of hydraulic equipment – specifically including both cutting and spreading equipment.

There are, in fact, two specifically designated heavy-rescue units in Pittsburgh – which are operated by the city's EMS agencies. Each unit is staffed by two paramedics with advanced training in rescue work. The two units are equipped with both the standard EMS set of medical equipment and with highly specialized heavy-rescue equipment – including, for example: (a) the hydraulic equipment needed for cutting cars open from the outside; and (b) specially designed airbags that can be used to lift very heavy and/or awkward loads (again, cars are probably the best example) off the bodies of trapped victims.

This carefully orchestrated blend of rescue and medical equipment allows the Pittsburgh units not only to safely get to the patient – and start to treat him or her in situ – but also to start the often tricky task of removing the patient a safe distance away from the incident scene.

The relatively common example of an overturned car vividly illustrates the various special skills possessed by these teams. On arrival the team first stabilizes the vehicle by shoring it up with a combination of wood boards and wedges (called cribbing), airbags, and/or jacks to make sure that the vehicle has been safely immobilized and is no longer a hazard to either the patient/victim or the responder team.

After the vehicle is stabilized, the paramedics at the scene can focus their full attention on reaching the patient and starting medical care – usually right in the car; as paramedics they are the best trained responders to provide such care. Finally, any other obstructions, at or close to the accident scene, to safely shifting the patient to the ambulance and the hospital beyond can be removed.

The use of paramedics trained in the techniques of rescue and integrated into the heavy-rescue team allows both the heavy-rescue and the emergency medical requirements to receive equal consideration in the decision-making process, and keeps both camps focused on the ultimate goal: a safe and successful rescue of the victim.

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.

Field-Based Patient Tracking: Real-Time Data Sharing Comes of Age

By Rodrigo (Roddy) Moscoso, Law Enforcement

The long-term goal of electronically tracking patients from the field to the hospitals to which they are taking is becoming a reality in several major jurisdictions in the United States. This achievement comes through the marriage of existing patient-tracking systems and new technologies designed to effectively capture, share, and manage health data on patients from the time an ambulance arrives on-scene to the day and time those patients are discharged from the hospital. Although certain technological and policy challenges remain significant hurdles that are still in the way of creating a true "end-to-end" solution, the future now looks much brighter for connecting healthcare providers at all levels and locations.

In such major cities as Los Angeles and St. Louis, for example – as well as in the National Capital Region (NCR – i.e., Washington, D.C., and its closer Maryland and Virginia suburbs) – EMS (emergency medical services) field personnel are using personal digital assistants (PDAs), cell phones, barcodes, and RFID (radio-frequency identification) tags to identify, track, and store essential health data for patients during major mass-casualty incidents (MCIs). These systems wirelessly link physical tags to the patient data collected in the field and transmit the information to a central server, which provides secure web access to individual hospitals, local and/or regional hospital command centers, emergency-management agencies, and other authorized healthcare agencies, organizations, and decision-making officials.

During and in the aftermath of an MCI, the aggregated data will provide healthcare leaders and operational personnel at all levels with a comprehensive report on the type, scale, and severity of a given incident. That information is of crucial importance to ensure that the appropriate level and type of response is provided both at the scene of the incident and later. The same data also greatly assists emergency managers, hospital resource officials, and other decision-making leaders with the information – based on hospital capacity (and, if needed, the specialized medical capabilities available) – needed to route patients expeditiously and efficiently.

The Real-Life Importance Of Real-Time Admittance

Another of the several important technological achievements referred to above involves the connection between the field data-gathering system (master patient database) and the patient-tracking systems of individual hospitals. For many years, hospitals have installed, and used, a relatively broad spectrum of internally focused patient tracking systems. Recently, however, many if not quite all of these systems have added a one-way data feed to newer types of field-tracking databases conformed to use existing medical data-exchange standards such as what is referred to as Health Level Seven (HL7). By simply referencing patient field "tags," hospitals can now transmit near-real-time admittance data from their individual databases to the central master patient database, thereby providing emergency managers with updated status reports on the location of patients.

A major "added benefit" of connecting these systems is that it simplifies the important task of facilitating family reunifications in the aftermath of an MCI or other major incident or event. Emergency managers with access to the master database can now quickly direct family members to a given patient's hospital almost immediately after that patient has been admitted.

Future goals for these connected systems include the establishment of "bi-directional" data exchanges between field and hospital systems. In the NCR, for example, the data, including vital statistics, collected in the field during an MCI are not at present automatically entered into the receiving hospital's internal patient tracking system. Adding this capability will require additional technical development as well as the establishment of new data standards governing

the format for such types of exchanges. The Department of Homeland Security's Science and Technology Directorate has already taken the first steps needed, though, to sponsor the development of the new TEP (Tracking of Emergency Patients) XML messaging standard being designed to support the exchange of emergency tracking information on patients from the time of the individual's hospital admission to and through the time of his or her release. These standards will be of critical importance as additional "home grown" commercial and government systems are developed and deployed. This new technological aspect of "mutual aid" must be clearly and carefully defined, though, to facilitate an efficient multi-jurisdictional response to an MCI.

The Privacy Act, FDA Concerns And Other Significant Issues

It is particularly important that policy issues, including privacy concerns, be considered fully during the development and use of the new systems and devices now in the pipeline – primarily to ensure compliance with existing laws such as the Health Information Privacy Act. In Virginia, a robust legal review was conducted as part of the process that created the statewide web portal to enable access to patient tracking data. Thanks to that review, such data is available only through the system's secure portal and not through newer GIS-based "situational-awareness" and/or "decision-support" tools.

Another factor to be considered is that the U.S. Food and Drug Administration (FDA) has expressed potential interest in regulating cell phones and PDAs as "medical devices." The rationale here is that the use of field patient-tracking software could be seen as "transforming" a PDA or cell phone into a medical device, therefore requiring the FDA's approval for use.

Despite these and other challenges, the future for "connected" patient-tracking systems now appears brighter than ever before, and should facilitate a better-managed and more comprehensive response to large-scale incidents and events at all levels of government.

Rodrigo (Roddy) Moscoso currently serves as Communications Manager for the Capital Wireless Information Net (CapWIN) Program at the University of Maryland. Formerly with IBM Business Consulting Services, he has over 15 years of experience supporting large-scale IT implementation projects, and extensive experience in several related fields such as change management, business process reengineering, human resources, and communications.

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Expanding the Definition of Public Health

By Raphael M. Barishansky, Public Health

In its 1988 "Future of Public Health" report, the U.S. Institute of Medicine (IOM) described public health in terms of its mission, substance, and organizational framework – which in turn address such important and interrelated topics as prevention, a community approach, health as a public good, and the contributions made by various partners. The same report defined the mission of public health, at that time, as "fulfilling society's interest in assuring conditions in which people can be healthy." A much earlier definition was provided by Charles-Edward Amory Winslow in a 1923 paper on "The Evolution and Significance of the Modern Public Health Campaign," in which he described public health as "the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities, and individuals."

The core functions of public health agencies, as defined in the 1988 IOM report mentioned above, are assessment, policy development, and assurance. In 1994, the Core Public Health Functions Steering Committee – a panel composed of representatives from U.S. Public Health Service agencies and other major public health organizations – of the U.S. Centers for Disease Control and Prevention (CDC) went into much greater detail by defining "Public Health Essential Services" as, among other things:

- Monitoring health status;
- Diagnosing and investigating health problems and health hazards;
- Informing, educating, and empowering people about health issues;
- Mobilizing community partnerships to identify and solve health problems;
- Developing policies and plans that support individual and community health;
- Enforcing laws and regulations that protect health and ensure safety;
- Linking people to needed personal health services and ensuring the provision of health care when otherwise unavailable;
- Ensuring the availability of a competent public health and personal health care workforce;
- Evaluating the effectiveness, accessibility, and quality of personal and population-based health services; and
- Conducting research leading to new insights and innovative solutions to health problems.

Most U.S. public health agencies – whether they are municipal, county, regional, or even state – organize themselves around functional operational divisions, or units; these divisions traditionally include, but are not limited to, such specialized fields as maternal and child health, surveillance/epidemiology, administration, environmental health, and behavioral health

Traditional Tasks, Plus Two for Modern Times

No matter which definition of public health, core function, or essential service is the principal focus, most U.S. public health agencies – whether they are municipal, county, regional, or even state – organize themselves around functional operational divisions, or units. These divisions traditionally include, but are not limited to, such specialized fields as maternal and child health, surveillance/epidemiology, administration, environmental health, and behavioral health.

Curiously, what is still lacking in most if not quite all of the preceding (and other) definitions, core functions,

and essential services are two words that have become increasingly relevant in recent years: "emergency"; and "preparedness." However, since the terrorist attacks of 11 September 2001 considerable funding has been provided to local, state, and federal public health agencies and organizations to orient them toward the more comprehensive state of public health preparedness needed to cope with the changed and more dangerous realities of today's world. One of the more expansive definitions of Public Health Preparedness comes from the Harvard School of Public Health's Center for Public Health Preparedness website, which states specifically that the "key elements" of public health preparedness now include "regularly exercised plans, timely access to information, clear knowledge of individual and agency roles and responsibilities, reliable communications systems, and connectivity between and among responding agencies."

Another updated definition of public health emergency preparedness – provided by the RAND Corporation in a 2007 report titled Ready or Not? Protecting the Public's Health from Diseases, Disasters, and Bioterrorism – goes into greater detail with the assertion that "The capability of … public health and health care systems, communities, and individuals to prevent, protect against, quickly respond to, and recover from health emergencies … threatens to overwhelm routine capabilities." The threat is greater, the report also says, during emergencies "whose scale, timing, or unpredictability" is uncertain. "Preparedness involves a coordinated and continuous process of planning and implementation," the report continues, "that relies on measuring performance and taking corrective action."

A Tip-of-the-Spear Summary

There are numerous responsibilities, including the following, currently assigned to the Public Health Preparedness units of today's post-9/11 Health Departments:

- Establishing an Incident Command System (ICS) structure for the Health Department; most of the emergency management continuum – which consists primarily of mitigation, preparedness, response, and recovery operations – is best handled by the entire department within the Incident Command System.
- Assuring National Incident Management System (NIMS) compliance within the Health Department; Homeland Security Presidential Directive 5 mandates that local and state government agencies adopt the National Incident Management System as the preferred model for their own emergency-response policies, procedures, and protocol-development and practice;
- Overseeing the mass dispensing of medications. Traditionally, this responsibility was related primarily to a prophylaxis medication distribution to the public following a bioterrorism incident, and was carried out in cooperation with the CDC's Strategic National Stockpile (SNS) – or a state's predesignated RSS (Receipt, Store, and Stage) site. However, as recent H1N1 ("Swine Flu") events have proved, this "dispensing" task can also include vaccinations.
- Developing, analyzing, testing, exercising, and revising various emergency and contingency plans – including and involving, for example, but not limited to, pandemic preparedness, SNS distribution, and both medical surge and Continuity of Operations requirements.

To summarize: Whether preparing and planning for, or responding to, public health emergencies, it is imperative that, in today's world, health departments of all sizes – and whether local, county, regional, or state – realize that protecting the health of those living in their communities requires a public health workforce that is fully prepared to respond to a broad range of public health threats. It is also in the best interest of these departments, therefore, which stand at the tip of the spear in protecting the general public, to establish fully funded divisions of Public Health Preparedness.

Raphael M. Barishansky, MPH, is currently the Program Chief for Public Health Emergency Preparedness for the Prince George's County (Md.) Department of Health. Prior to establishing himself in this position, he served as Executive Director of the Hudson Valley Regional EMS (Emergency Medical Services) Council, based in Newburgh, N.Y. A regular contributor to various journals, he can be reached at rbarishansky@gmail.com

The DuoDote™ Auto-Injector (atropine 2.1 mg/0.7 mL and pralidoxime chloride 600 mg/2 mL) is indicated for the treatment of poisoning by organophosphorus nerve agents as well as organophosphorus insecticides.

Important Safety Information

The DuoDote Auto-Injector is intended as an initial treatment of the symptoms of organophosphorus insecticide or nerve agent poisonings; definitive medical care should be sought immediately. The DuoDote Auto-Injector should be administered by Emergency Medical Services personnel who have had adequate training in the recognition and treatment of nerve agent or insecticide intoxication.

Individuals should not rely solely upon agents such as atropine and pralidoxime to provide complete protection from chemical nerve agents and insecticide poisoning. Primary protection against exposure to chemical nerve agents and insecticide poisoning is the wearing of protective garments including masks designed specifically for this use. Evacuation and decontamination procedures should be undertaken as soon as possible. **Medical personnel assisting evacuated victims of nerve agent poisoning should avoid contaminating themselves by exposure to the victim's clothing.**

In the presence of life-threatening poisoning by organophosphorus nerve agents or insecticides, there are no absolute contraindications to the use of the DuoDote Auto-Injector. When symptoms of poisoning are not severe, DuoDote Auto-Injector should be used with extreme caution in people with heart disease, arrhythmias, recent myocardial infarction, severe narrow angle glaucoma, pyloric stenosis, prostatic hypertrophy, significant renal insufficiency, chronic pulmonary disease, or hypersensitivity to any component of the product.

Please see brief summary of full Prescribing Information on adjacent page.

References: 1. DuoDote™ (atropine and pralidoxime chloride injection) Auto-Injector (package insert). Columbia, MD: Meridian Medical Technologies™, Inc.; 2007. **2.** Agency for Toxic Substances and Disease Registry. Medical Management Guidelines (MMGs) for nerve agents: tabun (GA); sarin (GB); soman (GD); and VX. Available at: http://www.atsdr.cdc.gov/MHMI/mmg166.html. Accessed February 21, 2007. **3.** Holstege CP, Dobmeier SG. Nerve agent toxicity and treatment. *Curr Treat Options Neurol.* 2005;7:91-98. **4.** Data on file. Columbia, MD: Meridian Medical Technologies™, Inc.

DuoDote™ AUTO-INJECTOR

(atropine and pralidoxime chloride injection)

Rx Only
Atropine 2.1 mg/0.7 mL
Pralidoxime Chloride 600 mg/2 mL

Sterile solutions for intramuscular use only

FOR USE IN NERVE AGENT AND INSECTICIDE POISONING ONLY

THE DUODOTE™ AUTO-INJECTOR SHOULD BE ADMINISTERED BY EMERGENCY MEDICAL SERVICES PERSONNEL WHO HAVE HAD ADEQUATE TRAINING IN THE RECOGNITION AND TREATMENT OF NERVE AGENT OR INSECTICIDE INTOXICATION.

INDICATIONS AND USAGE

DuoDote™ Auto-Injector is indicated for the treatment of poisoning by organophosphorus nerve agents as well as organophosphorus insecticides.

DuoDote™ Auto-Injector should be administered by emergency medical services personnel who have had adequate training in the recognition and treatment of nerve agent or insecticide intoxication.

DuoDote™ Auto-Injector is intended as an initial treatment of the symptoms of organophosphorus insecticide or nerve agent poisonings; definitive medical care should be sought immediately.

DuoDote™ Auto-Injector should be administered as soon as symptoms of organophosphorus poisoning appear (eg, usually tearing, excessive oral secretions, sneezing, muscle fasciculations).

CONTRAINDICATIONS

In the presence of life-threatening poisoning by organophosphorus nerve agents or insecticides, there are no absolute contraindications to the use of DuoDote™ Auto-Injector.

WARNINGS

CAUTION! INDIVIDUALS SHOULD NOT RELY SOLELY UPON ATROPINE AND PRALIDOXIME TO PROVIDE COMPLETE PROTECTION FROM CHEMICAL NERVE AGENTS AND INSECTICIDE POISONING.

PRIMARY PROTECTION AGAINST EXPOSURE TO CHEMICAL NERVE AGENTS AND INSECTICIDE POISONING IS THE WEARING OF PROTECTIVE GARMENTS INCLUDING MASKS DESIGNED SPECIFICALLY FOR THIS USE.

EVACUATION AND DECONTAMINATION PROCEDURES SHOULD BE UNDERTAKEN AS SOON AS POSSIBLE. MEDICAL PERSONNEL ASSISTING EVACUATED VICTIMS OF NERVE AGENT POISONING SHOULD AVOID CONTAMINATING THEMSELVES BY EXPOSURE TO THE VICTIM'S CLOTHING.

When symptoms of poisoning are not severe, DuoDote™ Auto-Injector should be used with extreme caution in people with heart disease, arrhythmias, recent myocardial infarction, severe narrow angle glaucoma, pyloric stenosis, prostatic hypertrophy, significant renal insufficiency, chronic pulmonary disease, or hypersensitivity to any component of the product. Organophosphorus nerve agent poisoning often causes bradycardia but can be associated with a heart rate in the low, high, or normal range. Atropine increases heart rate and alleviates the bradycardia. In patients with a recent myocardial infarction and/or severe coronary artery disease, there is a possibility that atropine-induced tachycardia may cause ischemia, extend or initiate myocardial infarcts, and stimulate ventricular ectopy and fibrillation. In patients without cardiac disease, atropine administration is associated with the rare occurrence of ventricular ectopy or ventricular tachycardia. Conventional systemic doses may precipitate acute glaucoma in susceptible individuals, convert partial pyloric stenosis into complete pyloric obstruction, precipitate urinary retention in individuals with prostatic hypertrophy, or cause inspiration of bronchial secretions and formation of dangerous viscid plugs in individuals with chronic lung disease.

More than 1 dose of DuoDote™ Auto-Injector, to a maximum of 3 doses, may be necessary initially when symptoms are severe. **No more than 3 doses should be administered unless definitive medical care (eg, hospitalization, respiratory support) is available.**

Severe difficulty in breathing after organophosphorus poisoning requires artificial respiration in addition to the use of DuoDote™ Auto-Injector.

A potential hazardous effect of atropine is inhibition of sweating, which in a warm environment or with exercise, can lead to hyperthermia and heat injury.

The elderly and children may be more susceptible to the effects of atropine.

PRECAUTIONS

General: The desperate condition of the organophosphorus-poisoned individual will generally mask such minor signs and symptoms of atropine and pralidoxime treatment as have been noted in normal subjects.

Because pralidoxime is excreted in the urine, a decrease in renal function will result in increased blood levels of the drug.

DuoDote™ Auto-Injector temporarily increases blood pressure, a known effect of pralidoxime. In a study of 24 healthy young adults administered a single dose of atropine and pralidoxime auto-injector intramuscularly (approximately 9 mg/kg pralidoxime chloride), diastolic blood pressure increased from baseline by 11 ± 14 mmHg (mean ± SD), and systolic blood pressure increased by 16 ± 19 mmHg, at 15 minutes post-dose. Blood pressures remained elevated at these approximate levels through 1 hour post-dose, began to decrease at 2 hours post-dose and were near pre-dose baseline at 4 hours post-dose. Intravenous pralidoxime doses of 30-45 mg/kg can produce moderate to marked increases in diastolic and systolic blood pressure.

Laboratory Tests: If organophosphorus poisoning is known or suspected, treatment should be instituted without waiting for confirmation of the diagnosis by laboratory tests. Red blood cell and plasma cholinesterase, and urinary paranitrophenol measurements (in the case of parathion exposure) may be helpful in confirming the diagnosis and following the course of the illness. However, miosis, rhinorrhea, and/or airway symptoms due to nerve agent vapor exposure may occur with normal cholinesterase levels. Also, normal red blood cell and plasma cholinesterase values vary widely by ethnic group, age, and whether the person is pregnant. A reduction in red blood cell cholinesterase concentration to below 50% of normal is strongly suggestive of organophosphorus ester poisoning.

Drug Interactions: When atropine and pralidoxime are used together, pralidoxime may potentiate the effect of atropine. When used in combination, signs of atropinization (flushing, mydriasis, tachycardia, dryness of the mouth and nose) may occur earlier than might be expected when atropine is used alone.

The following precautions should be kept in mind in the treatment of anticholinesterase poisoning, although they do not bear directly on the use of atropine and pralidoxime.

- Barbiturates are potentiated by the anticholinesterases; therefore, barbiturates should be used cautiously in the treatment of convulsions.
- Morphine, theophylline, aminophylline, succinylcholine, reserpine, and phenothiazine-type tranquilizers should be avoided in treating personnel with organophosphorus poisoning.
- Succinylcholine and mivacurium are metabolized by cholinesterases. Since pralidoxime reactivates cholinesterases, use of pralidoxime in organophosphorus poisoning may accelerate reversal of the neuromuscular blocking effects of succinylcholine and mivacurium.

Drug-drug interaction potential involving cytochrome P450 isozymes has not been studied.

Carcinogenesis, Mutagenesis, Impairment of Fertility: DuoDote™ Auto-Injector is indicated for short-term emergency use only, and no adequate studies regarding the potential of atropine or pralidoxime chloride for carcinogenesis or mutagenesis have been conducted.

Impairment of Fertility: In studies in which male rats were orally administered atropine (62.5 to 125 mg/kg) for one week prior to mating and throughout a 5-day mating period with untreated females, a dose-related decrease in fertility was observed. A no-effect dose for male reproductive toxicity was not established. The low-effect dose was 290 times (on a mg/m^2 basis) the dose of atropine in a single application of DuoDote™ Auto-Injector (2.1 mg).

Fertility studies of atropine in females or of pralidoxime in males or females have not been conducted.

Pregnancy:

Pregnancy Category C: Adequate animal reproduction studies have not been conducted with atropine, pralidoxime, or the combination. It is not known whether pralidoxime or atropine can cause fetal harm when administered to a pregnant woman or if they can affect reproductive capacity. Atropine readily crosses the placental barrier and enters the fetal circulation.

DuoDote™ Auto-Injector should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Atropine has been reported to be excreted in human milk. It is not known whether pralidoxime is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when DuoDote™ Auto-Injector is administered to a nursing woman.

Pediatric Use: Safety and effectiveness of DuoDote™ Auto-Injector in pediatric patients have not been established.

ADVERSE REACTIONS

Muscle tightness and sometimes pain may occur at the injection site.

Atropine

The most common side effects of atropine can be attributed to its antimuscarinic action. These include dryness of the mouth, blurred vision, dry eyes, photophobia, confusion, headache, dizziness, tachycardia, palpitations, flushing, urinary hesitancy or retention, constipation, abdominal pain, abdominal distention, nausea and vomiting, loss of libido, and impotence. Anhidrosis may produce heat intolerance and impairment of temperature regulation in a hot environment. Dysphagia, paralytic ileus, and acute angle closure glaucoma, maculopapular rash, petechial rash, and scarletiniform rash have also been reported.

Larger or toxic doses may produce such central effects as restlessness, tremor, fatigue, locomotor difficulties, delirium followed by hallucinations, depression, and, ultimately medullary paralysis and death. Large doses can also lead to circulatory collapse. In such cases, blood pressure declines and death due to respiratory failure may ensue following paralysis and coma.

Cardiovascular adverse events reported in the literature for atropine include, but are not limited to, sinus tachycardia, palpitations, premature ventricular contractions, atrial flutter, atrial fibrillation, ventricular flutter, ventricular fibrillation, cardiac syncope, asystole, and myocardial infarction. (See **PRECAUTIONS**.)

Hypersensitivity reactions will occasionally occur, are usually seen as skin rashes, and may progress to exfoliation. Anaphylactic reaction and laryngospasm are rare.

Pralidoxime Chloride

Pralidoxime can cause blurred vision, diplopia and impaired accommodation, dizziness, headache, drowsiness, nausea, tachycardia, increased systolic and diastolic blood pressure, muscular weakness, dry mouth, emesis, rash, dry skin, hyperventilation, decreased renal function, and decreased sweating when given parenterally to normal volunteers who have not been exposed to anticholinesterase poisons.

In several cases of organophosphorus poisoning, excitement and manic behavior have occurred immediately following recovery of consciousness, in either the presence or absence of pralidoxime administration. However, similar behavior has not been reported in subjects given pralidoxime in the absence of organophosphorus poisoning.

Elevations in SGOT and/or SGPT enzyme levels were observed in 1 of 6 normal volunteers given 1200 mg of pralidoxime intramuscularly, and in 4 of 6 volunteers given 1800 mg intramuscularly. Levels returned to normal in about 2 weeks. Transient elevations in creatine kinase were observed in all normal volunteers given the drug.

Atropine and Pralidoxime Chloride

When atropine and pralidoxime are used together, the signs of atropinization may occur earlier than might be expected when atropine is used alone.

OVERDOSAGE

Symptoms:

Atropine

Manifestations of atropine overdose are dose-related and include flushing, dry skin and mucous membranes, tachycardia, widely dilated pupils that are poorly responsive to light, blurred vision, and fever (which can sometimes be dangerously elevated). Locomotor difficulties, disorientation, hallucinations, delirium, confusion, agitation, coma, and central depression can occur and may last 48 hours or longer. In instances of severe atropine intoxication, respiratory depression, coma, circulatory collapse, and death may occur.

The fatal dose of atropine is unknown. In the treatment of organophosphorus poisoning, doses as high as 1000 mg have been given. The few deaths in adults reported in the literature were generally seen using typical clinical doses of atropine often in the setting of bradycardia associated with an acute myocardial infarction, or with larger doses, due to overheating in a setting of vigorous physical activity in a hot environment.

Pralidoxime

It may be difficult to differentiate some of the side effects due to pralidoxime from those due to organophosphorus poisoning. Symptoms of pralidoxime overdose may include: dizziness, blurred vision, diplopia, headache, impaired accommodation, nausea, and slight tachycardia. Transient hypertension due to pralidoxime may last several hours.

Treatment: For atropine overdose, supportive treatment should be administered. If respiration is depressed, artificial respiration with oxygen is necessary. Ice bags, a hypothermia blanket, or other methods of cooling may be required to reduce atropine-induced fever, especially in children. Catheterization may be necessary if urinary retention occurs. Since atropine elimination takes place through the kidney, urinary output must be maintained and increased if possible; intravenous fluids may be indicated. Because of atropine-induced photophobia, the room should be darkened.

A short-acting barbiturate or diazepam may be needed to control marked excitement and convulsions. However, large doses for sedation should be avoided because central depressant action may coincide with the depression occurring late in severe atropine poisoning. Central stimulants are not recommended.

Physostigmine, given as an atropine antidote by slow intravenous injection of 1 to 4 mg (0.5 to 1.0 mg in children) rapidly abolishes delirium and coma caused by large doses of atropine. Since physostigmine has a short duration of action, the patient may again lapse into coma after 1 or 2 hours, and require repeated doses. Neostigmine, pilocarpine, and methacholine are of little benefit, since they do not penetrate the blood-brain barrier.

Pralidoxime-induced hypertension has been treated by administering phentolamine 5 mg intravenously, repeated if necessary due to phentolamine's short duration of action. In the absence of substantial clinical data regarding use of phentolamine to treat pralidoxime-induced hypertension, consider slow infusion to avoid precipitous corrections in blood pressure.

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MMT 5173 11/07

New and Emerging Al Qaeda Threats

By Neil C. Livingstone, Viewpoint

In September, in the space of less than a week, six men in five states were arrested and charged with a variety of terrorist plots designed to murder Americans here at home. The men, all of whom acted independently of each other, were involved in four separate conspiracies.

The most significant arrests were of Najibullah Zazi in Aurora, Colorado, on 23 September, as well as his father and a third suspect, a Muslim cleric named Ahmad Wais Afzali, in Flushing, N.Y. It is believed that they were members of the first actual Al Qaeda plot to target Americans on the U.S. mainland since the 9/11 attacks. If that theory is borne out by the investigation now underway, it will be clear evidence not only that Al Qaeda still has teeth but that the American people will continue to be at risk – at home – far into the future.

A number of other Islamic extremists planning attacks have been apprehended in the United States since the 9/11 attacks, but it is believed that virtually all of the post-9/11 would-be terrorists were home-grown misfits, fantasists, and copy-cats. None had been trained abroad and/or specifically tasked by Al Qaeda to carry out attacks. Zazi, by contrast, is believed to have been trained in an Al Qaeda camp in Pakistan and to have been taking orders from Al Qaeda's high command. In addition, he appears to have accessed web sites on his personal computer – which contained information on bomb building.

Zazi was arraigned in New York, and pleaded not guilty, but the full scope of the plot and its membership are still being investigated, and sources suggest that the government is either watching or looking for as many as two dozen other possible suspects

Zazi was born in Afghanistan and immigrated to the United States when he was fourteen. Unbelievably, he was a shuttle-bus driver at Denver's international airport, which is clear evidence of the shoddy state of the background screening of foreign-born workers connected to the aviation industry.

Highly Explosive, and Readily Available

Fearing that an attack might be imminent, police and federal agents apparently moved more quickly than they had planned against Zazi and his confederates, and as a consequence were not able to arrest *all* of the suspected conspirators – or, as of early November, to find the materials that were intended to be used by the terrorists to build their explosives. It is believed that Zazi was planning to make explosive devices based on hydrogen peroxide similar to those used in 2005 in the series of attacks on the London subway system that killed 52 people and/or to the bomb found in the shoe of Richard Reid that was fitted with a TATP trigger.

TATP (triacetone triperoxide) is highly explosive, even in small quantities. Hydrogen-peroxide bombs can be assembled from a variety of readily available chemicals and materials, such as hydrogen peroxide itself, nail polish remover, and yeast; the same materials can be combined with other chemicals to make TATP or HMDT (hexamethylene triperdiamine – another very powerful explosive made of sulfuric acid, hydrogen peroxide, and acetone).

The U.S. government has receipts of Zazi's purchases as well as videotapes of his shopping sprees for the ingredients that could be used to fabricate explosive devices. Authorities also discovered fourteen back packs – as well as a large number of cell phones, and a digital scale – in one of the New York safe houses frequented by the alleged terrorists. Here it should be recalled that the terrorists in both London and Madrid (the site of another major bombing incident) carried their bombs in backpacks. It is believed, partly for that reason, that the targets of the Zazi group were likely to be mass-transit systems or sports arenas or stadiums.

One of the more disquieting aspects of the Zazi arrest is that he was tipped off by Afzali – who was an FBI informant and had assisted the Bureau in the past – that the police had been asking questions about Zazi.

The Zazi case was considered of such high priority that President Obama was reportedly briefed "three to four" times

a day about his movements. Zazi was arraigned in New York, and pleaded not guilty, but the full scope of the plot and its membership are still being investigated, and sources suggest that the government is either watching or looking for as many as two dozen other possible suspects.

Rectal and Underwear Bombs

Along with growing concern over Al Qaeda "sleepers" in the United States comes news of a possible new IED (improvised explosive device) bomb threat. On 27 August, Saudi Arabia's Prince Mohammed bin Nayef, that nation's counterterrorism chief, was slightly injured by a suicide bomber who detonated a device, which used the explosive PETN (pentaerythritol tetranitrate – yet another very powerful explosive), while attending a Ramadan reception. The device escaped detection, according to some sources, because it was hidden in the bomber's rectum. (But other reports suggest that the bomb had been secreted in the terrorist's underwear, and that he had counted on cultural taboos to escape a more careful search by security guards.)

The terrorist died in the attack and the prince sustained minor injuries, probably flash burns, to his fingers. Sources have theorized that the bomb did not cause greater damage because the device: (1) contained fewer than a hundred grams of explosive; and (2) was shielded by the terrorist's own body. Moreover, if it had been hidden in his rectum, there would have been very little room left for ball bearings, nails, or other shrapnel, which are terrorist weapons of choice because they usually produce the most injuries.

It should come as no surprise that terrorists would use body orifices to hide explosives since criminals have been smuggling illegal drugs, especially heroin, that way for years. If it is confirmed that it actually was a rectal bomb that was used in the attack on Prince Mohammed it would be further evidence of the fanaticism of at least some of the terrorists confronting the United States today.

Dr. Neil C. Livingstone, chairman and CEO of Executive Action LLC and an internationally respected expert in terrorism and counterterrorism, homeland defense, foreign policy, and national security, has written nine books and more than 200 articles in those fields. A gifted speaker as well as writer, he has made more than 1300 television appearances, delivered over 500 speeches both in the United States and overseas, and testified before Congress on numerous occasions. He holds three Masters Degrees as well as a Ph.D. from the Fletcher School of Law and Diplomacy. He was the founder and, prior to assuming his present post, CEO of GlobalOptions Inc., which went public in 2005 and currently has sales of more than $80 million.

Supply on Demand: The Strategic National Stockpile

By Kate Rosenblatt, Health Systems

With the cold and flu season rapidly approaching and the H1N1 influenza virus continuing to spread, it seems an appropriate time to review resources. Whether it is Tamiflu or nerve-agent antidotes, the Strategic National Stockpile (SNS) is ready to assist states and first responders.

The mission of the SNS, which is managed by the Centers for Disease Control and Prevention (CDC), is to supplement the medical resources possessed by state and local public health agencies by providing additional resources in times of crisis. Those "additional resources" include but are not limited to antibiotics, chemical antidotes, antitoxins, and life-support medications as well as airway maintenance supplies and a broad spectrum of other medical and surgical items. These and other supplies are quickly made available when there is a public-health emergency anywhere in the United States; the supplies are "free" in the sense that they are paid for by U.S. taxpayers, but there is no additional cost incurred by the state and local jurisdictions receiving the supplies. In addition, the SNS is committed to delivering the supplies within 12 hours of the decision to provide them.

SNS deployment is activated when state and federal authorities agree there is a need. In times of crisis – a terrorist attack or a weather disaster, for example – the state governor's office would make a deployment request to the CDC and HHS. After both of those federal agencies review the request and confirm the need, "Push Packages" – the term used for pre-packaged collections of pharmaceuticals, antidotes, and general medical supplies – are sent. As the Push Packages are shipped out (usually via cargo aircraft or trucks) Technical Advisory Response Units (TARUs) also are being deployed to the disaster scene to work with state and local officials in dealing with the crisis. After the supplies arrive on-scene, they become the responsibility of the local authorities involved. The TARU staff personnel usually remain on the scene to help, but actual distribution of the supplies is handled by the state agencies and authorities.

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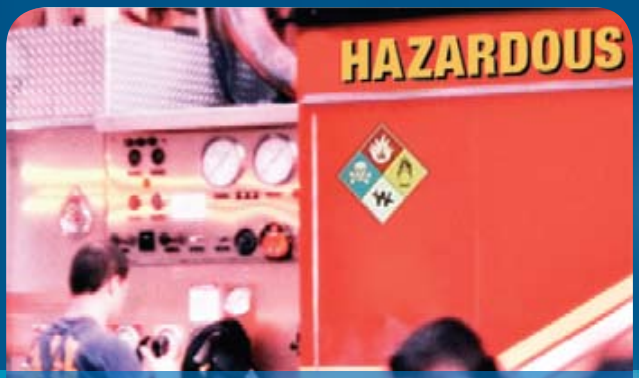

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The shipment of SNS assets also may be authorized when there is evidence of the release of a biological or chemical agent that could be harmful to the public. The Push Packages consist primarily of a variety of "general needs" materials, but the SNS program also has a number of more specialized VMI (vendor-managed inventory) supplies available. The VMI packages are tailored more to meet particular needs or provide special materials that have been specifically requested, and their delivery usually follows the Push Packages by 12-24 hours or so. However, if the cause of the emergency is identified and defined early enough, the VMI materials also can be immediately shipped as part of the SNS's first-response actions.

Many states and local jurisdictions already have been planning, of course, for the possibility of an influenza pandemic; for that reason, and because of the current concern about the H1N1 virus, the SNS has already stocked up on Tamiflu and Relenza in order to meet state requests as soon as possible. (In any case, there really is little if any need to worry about the timing, because all SNS stocks are inspected, inventoried, and limited to their previously determined shelf life.)

The supplies are "free" in the sense that they are paid for by U.S. taxpayers, but there is no additional cost incurred by the state and local jurisdictions receiving the supplies; in addition, the SNS is committed to delivering the supplies within 12 hours of the decision to provide them

The Agencies Have Changed; The Mission Has Not

The SNS originated as the National Pharmaceutical Stockpile (NPS) in 1999, when Congress ordered the U.S. Department of Health and Human Services (HHS) and the CDC to establish a cache of medical materials to re-supply states and local communities throughout the nation in future times of emergency. With the passage of the Homeland Security Act in 2002, the Department of Homeland Security (DHS) became responsible for the stockpile, the deployment of the NPS materials, and the goals of the program. In March 2003 the NPS officially became the Strategic National Stockpile; later, after passage of the BioShield Act of 2004 (designed to protect the nation from a bioterrorism attack), the program returned to HHS management.

Since 2001 the CDC has been working with state, local, and tribal agencies on distribution plans for SNS materials. Today, all 50 states have developed a wide variety of plans – which are reviewed annually by the CDC – to meet individual state needs. Considerable progress has been made in refining and improving those plans from year to year – but it should be noted that only 36 state plans were considered satisfactory in the 2006-07 CDC review. (The annual reviews cover, among other things: (a) state legal statutes related to the distribution process; (b) the coordination of public health departments with community partners; and (c) both the type and frequency of training as well as the evaluation of state response plans.)

The SNS program is also active even when there is no current crisis to attend to. The SNS program offers training to federal officials, governors' offices, and a broad spectrum of state and local officials. The CDC and SNS also are working together to improve SNS asset-distribution plans and to inform the American people about the resources available. To achieve those goals the two agencies are working not only with HHS, emergency-response coordinators at all PHS (Public Health Service) regional offices, and numerous local health departments and emergency-management agencies but also with the Department of Defense, the Department of Veterans Affairs, and cities and states affiliated with the Metropolitan Medical Response System.

Additional information about the SNS is available online via the CDC's Public Health Training Network, where webcasts focus on such specific issues as point-of-dispensing design and operations, the management of volunteer staff, engaging at-risk populations, and the Cities Readiness Initiative. Whether it is Tamiflu or training, the SNS is always ready to help, not only during an actual crisis but also during the planning process needed to deal more effectively with a future crisis.

Kate Rosenblatt is a writer based in the Washington, D.C., metropolitan area. She has a background in education reform, communications, and business development, and has written for a number of publications on a broad range of subjects ranging from finance to fashion to public safety and related topics.

Ham Radio – An Emergency Tool for Public Health

By Barry Kanne, Public Health

Many citizens served their communities heroically in the aftermath of Hurricane Katrina, and some of their stories are well known – but most of them remain untold. One of the still relatively unknown heroes is a legally blind New Orleans jazz musician, who also happens to be an amateur radio operator – one of more than 676,000 FCC-licensed amateur radio operators living throughout the United States – who came to New Orleans' Charity Hospital to set up his own battery-operated station in anticipation of the storm, and to be ready to help as and when needed.

Not long after Katrina first hit the New Orleans area, a pregnant woman, already in labor, waded through the muddy water and made her way into the hospital. The Charity doctors concurred that she needed a C-section, but with no phones, electricity, or running water available were not able to carry out such a complicated procedure at the hospital itself, so an evacuation helicopter would be required. The doctors turned to the ham, who made the call needed and started a communications chain that led to the successful evacuation. Thanks to the service provided by this single amateur radio operator, two lives were saved – the mother's, and the baby's.

In the aftermath of Katrina-type weather disasters – or any other mass-casualty incident – there is always a critical need to communicate with the outside world. For many responder agencies, amateur radio is therefore a true national resource – indeed, some might say, "a national treasure." And one of the crown jewels of that treasure is the Amateur Radio Emergency Service (ARES®) – organized by the American Radio Relay League (ARRL), the national association for Amateur Radio, which in the United States is structured on a county-by-county basis.

ARES ham radio members, who come from all walks of life, freely volunteer their time, equipment, and expertise to benefit their local communities. As trained communicators, they are proficient in relaying vital messages quickly, effectively, and efficiently.

In the aftermath of any mass-casualty incident there is always a critical need to communicate with the outside world; for many responder agencies amateur radio is therefore a true national resource – indeed, some might say, "a national treasure"

Welcome Financial Help, But an Unfortunate Presumption

Following Katrina, and in response to requests from several state and local government agencies, the U.S. Department of Homeland Security (DHS) provided preparedness funds to help meet the anticipated communications needs of numerous state public-health agencies. In Georgia, for example, the state Division of Public Health used the DHS funding to install ham radio stations in 15 regional coordinating hospitals. Each of those stations is staffed by local ARES volunteers, who stand ready to provide reliable communications between and among the hospitals themselves, the Georgia Division of Public Health, and the amateur-radio community at large.

Even without a regional disaster to provide additional incentive, amateur radio operators are and have been there, for many years, to help support public and non-profit organizations by providing emergency communications at an untold number of civic special events in cities and counties throughout the country.

Some organizations presume, erroneously, that the ham radio community will be there when their *normal* means of communications fail. The truth is, though, that amateur radio supports, but does not *replace*, crucial communication assets operated by local government and non-profit agencies. To date, hams have proven themselves invaluable – so much so that, as David Sumner, K1ZZ, the ARRL's chief executive officer, points out in his September 2009 *QST* magazine editorial, "The problem is [that] we have become victims of our own success."

Amateur radio, when used as a communications tool in times of disaster, should therefore be recognized for being exactly what it is: an important aspect of a highly diverse hobby. Nonetheless, numerous widespread emergencies, spread over the past several decades, have shown that amateur radio can – and frequently does – provide on-the-ground, first-hand reports to those living and working outside the areas most directly

affected (by a hurricane, tornado, wildfire, or other danger). Amateur radio operators are, above all, communicators. As such, they possess the skills, knowledge, and will to adapt to the environment in which they find themselves. In short, they are able to get the message through "when all else fails."

A Sudden Emergency, an Immediate Response

That certainly was the case in Atlanta just over 18 months ago – i.e., in March 2008, when a thunderstorm unexpectedly strengthened and spawned tornadoes as it moved across Atlanta's downtown area. The winds reached 130 miles per hour and cut a six-mile path of destruction. Because there was no anticipated need, the Skywarn Net (hams trained to observe and report weather conditions for the National Weather Service [NWS]) was not operational – this storm gave no warning.

Over a radio repeater, though, one lone voice, using only a hand-held radio, kept calling "CQ, CQ" – the message that hams use to call for *any* station on the air. The ham calling in this instance, who found himself positioned in the worst of the storm-affected area, was trying – as he went door to door, checking on his neighbors – to contact a land-based station to report fallen trees, downed power lines, and the general damage resulting from the tornado.

Another station heard the call, responded, and an ad hoc emergency net was established. For five hours, hams throughout the Atlanta area fielded storm reports and relayed damage observations to the National Weather Service, while also providing vital information to the appropriate hospital and public-safety officials who were in the process of establishing a unified command center.

Strict Financial Rules – With a Common-Sense Exception

Accreditation organizations in the public-health arena recognize the contributions made by amateur radio and have been encouraging the installation of amateur radio stations in key facilities (and reporting such installation in the facility's professional evaluation). Such recognition is gratifying, obviously, but it also presents a dilemma of sorts both to the healthcare facility and to the individual ham radio licensees at the facility. Those hams, who are also employees of the emergency organization, must use caution not to violate the FCC (Federal Communications Commission) rules addressing pecuniary interest.

Some hospitals have established in-house amateur radio clubs, and – by offering classes and opening the hospital station to employees for recreational purposes during off-duty hours – actively encourage interested employees to attain their ham licenses. These helpful activities sometimes lead to an incorrect impression, though – namely, that the ham radio station can be used to carry out hospital business when the hospital's primary communications channels are down.

That is not quite the way the system works, though. The FCC is quite clear in its rules pertaining to amateur radio: "No amateur shall transmit communications in which the station licensee, or control operator, has a pecuniary interest, including communications on behalf of an employer." In a genuine emergency, however, the FCC also says, "This rule may be waived for the duration of a clearly defined emergency." There are some very narrow exceptions to this long-standing rule, but during times of conflicting directions from differing federal agencies, the FCC ruling must be strictly observed.

Nonetheless, when it comes to supporting the interest of the public, especially in times of widespread disaster, the nation's amateur radio community can almost always be found front and center, lending time, equipment, and the individual and collective expertise of the hundreds of thousands of the nation's ham operators to public health and relief agencies that are responding to the needs of the American people.

For additional information:
About the American Radio Relay League, click on www.arrl.org;

About ARES, click on www.arrl.org/FandES/field/pubservice.html;

About the Hurricane Watch Net, click on www.hwn.org; and
About the Joint Commission's Standing Together, An Emergency Planning Guide for America's Communities, click on http://www.jointcommission.org/NR/rdonlyres/FE29E7D3-22AA-4DEB-94B2-5E8D507F92D1/0/planning_guide.pdf.

Barry Kanne is the assistant section emergency coordinator for public health, Amateur Radio Emergency Service, Georgia Section, of the American Radio Relay League. A licensed amateur radio operator since 1953, he is currently president of TGA Communications, LLC, in Atlanta, Georgia.

Case Study: Influenza Preparedness in Marin County

By Mary Lilley, Case Study

In mid-April 2009, the federal Centers for Disease Control and Prevention (CDC) reported confirmed cases of H1N1 in several states. As the virus continued to spread throughout the country, Marin County, California, just north of San Francisco, was one of the communities quick to respond. On 25 April, the county's Department of Health and Human Services (H&HS) activated its Department Operations Center (DOC) in coordination with the Sheriff's Office of Emergency Services (OES). Three days later (28 April) the county announced its first confirmed H1N1 cases.

In the midst of response operations, Marin County recognized that the H1N1 outbreak would continue through the summer into the 2009-10 influenza season. The combination of a severe H1N1 resurgence and the traditional influenza season could potentially exceed the county's response capabilities and resources. With that in mind, OES searched for specific ways it could prepare for an H1N1 resurgence.

In the absence of federal or state guidance, OES turned to scenario-based planning, a technique the county was familiar with because of its previous experience in planning for earthquakes. OES personnel concluded that an H1N1 resurgence would have to be dealt with in more or less the same way, because, much like an earthquake, it would be impossible to predict exactly where an earthquake would occur and/or the extent of damage it would cause. However, reasonable assumptions could and should lead to effective preparedness efforts.

Designing the Assessment; Checking the Probabilities

In June 2009, OES created a plausible threat assessment with three purposes in mind: (a) to define the specific H1N1 threat facing Marin County; (b) to communicate the nature of that threat to county officials; and (c) to identify Marin County's own response-capability shortfalls. Such an assessment not only would allow OES to quantify the impact of H1N1 on Marin County but also would help shape the planning efforts being developed in the months leading up to the 2009-10 influenza season. OES also decided to present the assessment in an abbreviated format that would allow for quick and easy briefings to county leaders. The assessment also targeted the entire emergency-management community, rather than being made available only to public-health officials.

County officials built the threat assessment around three H1N1 "resurgence" scenarios of varying severity: mild, moderate, and severe. Each scenario included varying attack, hospitalization, and case fatality rates, complete with descriptive narratives. OES based its calculations on the CDC's FluSurge model, but with slight modifications to account for: (a) the transmission characteristics of the H1N1 virus; and (b) the county's own demographic data. OES then translated those numbers into absenteeism rates, medical costs, and the probable economic impact on the county. To double-check its own work, OES consulted epidemiologists at H&HS to ensure the accuracy and plausibility of OES calculations.

OES analyzed the final figures to determine the response measures necessary for each of the scenarios postulated. The response measures included, but were not limited to: the activation of an emergency operations center (EOC); quarantine and social "distancing" practices; several types of public-information campaigns; and the issuance of emergency proclamations. OES determined, for example, that a "moderate" H1N1 resurgence would call for full activation of the H&HS DOC and possible restrictions on public gatherings for selected events. After the response requirements were clearly defined, OES was able to highlight specific areas for improvement along with recommended preparedness actions for each scenario.

The threat assessment revealed several gaps in the county's current response capabilities. For example, OES learned that its virtual EOC capability could not sustain operations for long periods of time and would therefore have to be strengthened. In addition, the assessment helped to guide the county decision-making process by educating local leaders on Marin County's capabilities gaps and presenting several options for improvements. One example: county leaders decided to relieve emergency-management personnel from responsibilities and engagements – *not* related to H1N1 preparedness planning – after 1 October.

Not incidentally: (1) Marin County officials said they plan to use the same threat-assessment tool to help cope with future pandemics; and (2) By adjusting the demographics data, the Marin County assessment could easily be made adaptable to other jurisdictions – and for that reason, in fact, has already been passed along to other jurisdictions throughout California.

For additional information on the Marin County Threat Assessment, and for resources on pandemic influenza and the H1N1 outbreak, visit Lessons Learned Information Sharing at www.llis.gov.

Mary Lilley is a researcher for the Department of Homeland Security/Federal Emergency Management Agency's Lessons Learned Information Sharing (LLIS.gov) system. In this role, she manages LLIS.gov's public health discipline, collects information from subject-matter experts to develop content for the system, and attends conferences for research and outreach purposes. In addition, Ms. Lilley has conducted research on the 2008 Iowa summer storms after-action effort and the 2007 San Diego firestorms. Prior to joining the LLIS.gov team in March 2008, she served as a research assistant at the Hudson Institute's Center for Future Security Strategies. Ms. Lilley earned a B.A. in Political Science and Spanish from Duke University.

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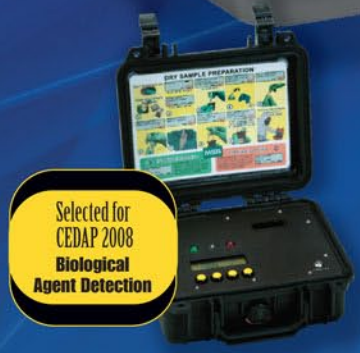

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Iran's Long Reach Into the U.S. Homeland

By Neil C. Livingstone, Viewpoint

Not quite two weeks ago – on Thursday, 12 November, to be more specific – the U.S. government moved against a non-profit foundation in New York that has been suspected, for many years, of being a front for the Iranian government. Prosecutors want to seize the assets of the Alavi Foundation, believed to be valued at more than $500 million, because of evidence that money from the foundation is being used to support international terrorism, to underwrite Iran's nuclear program, to carry out espionage, to keep tabs on Iranians in the United States, and to illegally acquire sensitive U.S. technologies (and operational as well as other information about those technologies). The foundation also promotes Iran's foreign policy goals and distributes propaganda favorable to the clerics who run Iran today.

Among the principal assets of the foundation are a 36-story office tower in New York (worth somewhere between $570 million and $650 million), various bank accounts, 100 acres of land in Virginia, and several Islamic centers (mosques and schools) in four states.

The foundation asserts, though, that it is a "private not-for-profit organization devoted to the promotion and support of Islamic culture and Persian language, literature, and civilization." Originally established by the Shah of Iran and named the Pahlavi Foundation, the foundation was renamed after the Shah was overthrown and the mullahs came to power in Tehran.

The planned forfeiture is being contested by the foundation, which argues that it is innocent of all charges. But in the 96-page federal complaint it is alleged that the Alavi Foundation "is controlled by the Islamic Republic of Iran and has been providing numerous services to the Iranian Government ... including managing a commercial building for the Iranian government, running a charitable organization for the Iranian government, and transferring funds from 650 Fifth Avenue Company to Bank Melli." The 650 Fifth Avenue Company, which owns the New York office building, is a partnership between the Alavi Foundation and Bank Melli, which is also called the National Bank of Iran, and is owned and operated by the government of Iran.

Bank Melli's ownership is disguised through two shell companies, the Assa Corporation, incorporated in New York, and a Channel Island company named Assa Company, Ltd. The U.S. Treasury Department contends that, between 2002 and 2006, Bank Melli provided at least $100 million to such terrorist groups as the Quds Force, Palestinian Islamic Jihad, and Hamas. It is interesting to note that, in December 2008, the Alavi Foundation also contributed between $25,000 and $50,000 to the William J. Clinton Foundation – presumably, it has been suggested, in an effort to buy political favor.

The seizure move by the United States comes at a particularly difficult time in U.S.-Iranian relations thanks in large part to: (a) the recent disclosure of another secret Iranian site engaged in uranium enrichment; and (b) continuing protests over the rigged election that returned Mahmoud Ahmadinejad to the presidency

Obstacles to a Dialogue, and The Al Shabaab Complication

As was expected, the government of Iran denounced the planned U.S. property seizures as "disgraceful." Here it should be noted that, although President Obama has offered a number of times, both during last year's presidential campaign and since his inauguration, to engage in a public dialogue with the Iran, the seizure move by the United States comes at a particularly difficult time in U.S.-Iranian relations thanks in large part to: (a) the recent disclosure of another secret Iranian site engaged in uranium enrichment; and (b) continuing protests over the rigged election that returned Mahmoud Ahmadinejad to the presidency.

The fact that Iran has operated so flagrantly and openly in the United States – despite unilateral U.S. sanctions imposed

on Iran after the 1979 seizure of the U.S. embassy in Tehran, followed by passage of the Iran-Libya Sanctions Act (ILSA) of 1996, as well as various U.N. sanctions – suggests that more must be done to root out all of Iran's front organizations and sleeper agents in the United States. No nation currently represents more of a threat to the United States itself, and to U.S. allies in the Middle East, than Iran, and the day may come when there is open conflict between the United States and Iran (and its terrorist proxies). In an era of major uncertainties, there is at least one continuing truth – namely, that the fewer assets that Iran has within America's borders the more secure the United States will be.

Iran may be the biggest and most likely threat at present, but it is by no means the only major terrorist threat facing the United States, as the continuing conflict in Afghanistan proves. And, despite the fact that the term "global war on terrorism" is now considered (in some quarters) to be politically incorrect, the terrorist threat to the United States itself is not limited to groups or factions headquartered in the Middle East. Two months ago, FBI Director Robert Mueller voiced public concern about possible attacks within the United States that might be carried out by the Somali terrorist group al-Shabaab, which is affiliated with Al Qaeda. (The first known U.S. citizen to become a suicide bomber was a Minneapolis man closely connected with Al Shabaab.)

Al-Shabaab has a particularly extreme world view that makes the Taliban look liberal by comparison. The group has gone so far as to ban certain musical "ring tones" on cell phones, declaring that they are "unIslamic." Western clothing, including so-called "deceptive bras" worn by American women, also is banned, and Al Shabaab has suppressed virtually all forms of entertainment in the areas of Somalia that it controls.

These and other extremist measures do not necessarily make Al Shabaab a global threat, of course. But the nations of the Free World have not yet found an effective way to defeat Somalian piracy, so there is no reason for optimism on the part of those who consider Al Shabaab a relatively minor inconvenience. As for those who believe that Al Qaeda, the Taliban, and Al Shabaab are merely temporary obstacles to a lasting peace throughout the Middle East, it might be well to remember that The Order of the Assassins, an earlier terrorist group driven by many of the same beliefs, was active in the same region from the eighth to the 14th centuries.

Kansas & Oklahoma, Nebraska, Arkansas, and Washington, D.C.

By Adam McLaughlin, State Homeland News

Kansas & Oklahoma Conduct Joint Exercise To Battle Livestock Disease

Trucks that could be hauling livestock along the border between Kansas and Oklahoma were detained, and their drivers were questioned, during a late October drill aimed at protecting the nation's food supply from foot-and-mouth disease.

State and local authorities set up roadblocks and pulled livestock vehicles over near Sitka, Kansas, and Turpin, Oklahoma, to ask questions about the live cargo the vehicles were carrying, and their destinations. The stoppages were part of what officials said was the first two-state exercise designed to halt the movement of livestock from one state to another should the disease break out.

The exercise took place only days after final congressional approval of the first $32 million in funds being provided for the planning and construction of a proposed laboratory complex that would research foot-and-mouth – and other animal diseases – at Kansas State University in Manhattan, Kansas. The 520,000-square-foot National Bio and Agro-Defense Facility would replace an antiquated lab on Plum Island, N.Y., previously used for such research.

The exercise, which was monitored by officials from a number of other states – including Colorado, Iowa, and Nebraska – was based on a scenario that included a presumptive case of foot-and-mouth disease, in another state, that would prompt Kansas officials to declare an emergency and clamp down on livestock border crossings.

There are more than 5,000 access points along the borders between Kansas and its four closest neighboring states, but only 500 of the access points can handle the large tractor-trailer livestock haulers. Kansas Livestock Commissioner George Teagarden said that an estimated 50,000 or so head of livestock are on Kansas roads at any given moment. "We realize that we cannot stop traffic on every road," he said. "[But] we need to reduce the risk and we do not want to move the disease, wherever it is." In the event of an actual outbreak, officials said, the livestock haulers would be stopped, turned back to their "point of origin," or held for inspection.

Kansas has been developing its plans for responding to a foreign animal-disease outbreak, such as the intentional introduction of foot-and-mouth and/or mad cow disease, since 1998, Teagarden said. There has been no reported case of foot-and-mouth disease in livestock within the United States since 1929, though. In large part because of that, Teagarden said, he believes the biggest threat of an outbreak would involve terrorists intentionally introducing the disease into an agricultural area to harm the U.S. economy.

State and local authorities set up roadblocks and pulled livestock vehicles over to ask questions about the live cargo the vehicles were carrying; the stoppages were part of the first two-state exercise to halt the movement of livestock from one state to another should disease break out

Foot-and-mouth "is a disease that does not affect humans," he said, "so terrorists could play with it without endangering themselves." In addition, he suggested, there is also the unlikely possibility that the disease could be accidentally brought into the United States by someone who has traveled to another nation.

Nebraska Hospitals Could Use Tents To Provide Influenza Care

Hospital officials within the state of Nebraska are on record that the flu cases caused by this year's pandemic influenza are already sending so many patients into the state's hospital emergency rooms that healthcare workers may have to handle additional cases in tents and trailers if the problem gets much larger.

"On average," there already are "anywhere from 30 to 60 additional patients a day," said Cheryl Rourke of Bryan LGH Medical Center East, in Lincoln, Nebraska. Hospital officials said they expect that number to go up as the H1N1 (Swine Flu)

virus continues to spread. At least part of the problem is caused, though, by the fact that many people are coming into emergency rooms who do not really need hospital care, and those patients are taking medical attention, and emergency-room space, away from others with more serious symptoms.

If the current situation continues, said Timothy Timmons of the Lincoln-Lancaster County Health Department, state officials will have to take whatever measures are necessary "to take the stress off the emergency departments in local hospitals." One way to do that, according to city health officials, would be to set up "flu tents" and/or special clinics.

Fortunately, the Lancaster County Emergency Management Office has heated decontamination tents and trailers available that could be set up in easily accessible outdoor areas such as parking lots. The tents and/or trailers could be used to: (a) isolate flu patients from regular emergency-room traffic; and/or (b) screen out H1N1 patients who need special medical attention.

Officials also pointed out two potentially major problems: first, the tents (and/or trailers) would be costly to staff 24 hours a day; and second, they would have to be located where the public could easily reach them. The combination of either or both of those problems occurring "is what we are trying to avoid," Timmons said. "That is why we are asking for the community's help."

Officials said that anyone who is experiencing "flu-like symptoms" but is not having serious complications – and/or is not part of a high-risk group – should probably "just stay home."

"A test will not help them," added Lori Snyder-Sloan of the Sloan/St. Elizabeth Medical Center. "They probably will not get medication unless they are in a high-risk group anyway. So there is no real advantage to coming to the hospital."

Lieutenant Governor Rick Sheehy said that the state's current hospital bed space is sufficient to meet anticipated needs, and that the idea of using tents or trailers to handle additional patients is only a contingency plan.

Arkansas
Dam-Break Exercise Helps County Test Mass Notification System

Being proactive is almost always the best way to be prepared to cope with any type of emergency – which is why numerous agencies, organizations, and businesses in Arkansas's Sharp County participated in a disaster-preparedness exercise late last month in Cherokee Village.

The exercise scenario, designed to find out how the county would react if one of the dams on area lakes were breached, was first presented to local, county, and state officials, who knew that a massive number of participants in the exercise would have to respond in the event a similar type of disaster were to occur in a real-life situation.

Following the AlertXpress call, members of the Cherokee Village Police Department went through the lake area to alert residents about the mock emergency – but including information to reassure them that it was "only a drill"

The scenario focused first on the chain of command that would be used in the event one of the dams were to break. The exercise started just after 9:00 a.m. on 28 October with a telephone message – from the Sharp County Sheriff Department's AlertXpress system – that was sent simultaneously not only to all area residents on East and West Lakeshore Drive in Cherokee Village but also to all Town Center businesses that would be in danger if the "event" had been an actual emergency situation. What was described as a Practically Instantaneous Failure (PIF) message had been composed by the Sharp County Sheriff Department.

AlertXpress is a software system the department uses in collaboration with numerous other county agencies and organizations involved in disaster situations. The system provides the department with numerous options, related to various types of scenarios, to help keep the public safe in the event of an emergency or disaster type of situation; templates that include the call lists of area residents are already completed for many of those situations. Residents who received the 28 October message were instructed to press a specific number on their phone. The act of pressing the number tells the system who has received the message.

If the call goes unanswered, the system is designed to redial the same number several more times.

The exercise allowed the Sheriff Department to update the phone numbers of residents in the areas that would have been affected in a real-life situation. Cherokee Village Fire Chief Michael Taylor described the drill as basically a three-tier operation that had been designed as a learning tool for all departments to better prepare them in the event of an actual disaster. Following the AlertXpress call, he said, members of the Cherokee Village Police Department went through the lake area using the public-address systems on their patrol cars to alert residents about the mock emergency – but including information to reassure them that it was "only a drill." Members of the fire department followed the patrol cars to check on homes where there was no visible activity.

Following the exercise, officials gathered to critique the drill and agreed that it had gone "very well" – it not only provided emergency personnel the opportunity to recognize potential problems but also gave the department an easy way to update the phone numbers of local residents. Many of the phone numbers previously listed on the county system were considerably outdated, it quickly became obvious, and the updates will allow the county to notify residents, more quickly and more easily, in the event of an actual dam break.

Washington, D.C.
National Cybersecurity and Communications Integration Center Opens

On 30 October, Department of Homeland Security (DHS) Secretary Janet Napolitano announced the opening of the new U.S. National Cybersecurity and Communications Integration Center (NCCIC) – a 24-hour, DHS-led and -coordinated watch-and-warning facility that is expected to significantly improve federal efforts to address threats and incidents affecting the nation's critical information-technology and cyber infrastructure.

"Securing America's cyber infrastructure requires a coordinated and flexible system to detect threats and communicate protective measures to our federal, state, local, and private-sector partners and the public," Napolitano said. "Consolidating our cyber and communications operations centers within the NCCIC will enhance our ability to effectively mitigate risks and respond to threats."

The opening of the new state-of-the-art facility fulfills one of President Obama's highest domestic-preparedness priorities: to improve the nation's information-sharing and incident-response abilities to protect and secure the nation's cyber networks and infrastructure.

The NCCIC provides an integrated incident-response facility that is able to mitigate risks that could disrupt or degrade critical information-technology functions and services, while also allowing greater flexibility in handling traditional voice and more modern data networks.

The new unified operations center combines two of DHS's principal operational organizations: the U.S. Computer Emergency Readiness Team (US-CERT – which leads a public-private partnership intended to protect and defend the nation's cyber infrastructure); and the National Coordinating Center for Telecommunications (NCCT), the operational arm of the National Communications System.

The NCCIC also will integrate the efforts of: (a) the National Cyber Security Center (NCSC), which coordinates operations among the six largest federal cyber centers; (b) the DHS Office of Intelligence and Analysis; and (c) various private-sector partners.

The NCCIC was created in response to a joint recommendation from the National Security Telecommunications Advisory Committee, the Government Accountability Office, and a high-level industry-government working group, all of which emphasized the need for collocation, integration, and interoperability between and among current cyber and communications incident-response systems.

Adam McLaughlin is with the Port Authority of NY & NJ, and is the Preparedness Manager of Training and Exercises, Operations & Emergency Management, where he develops and implements agency-wide emergency response and recovery plans, business continuity plans, and training and exercise programs. He designs and facilitates emergency response drills/exercises for agency responders, state and federal partners, and senior Port Authority executives.

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