



# The Beacon

## BY AND FOR EMERGENCY RESPONDERS

### PREPARING FOR WMD EVENTS IN SAN JOSE

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San Jose Metropolitan Medical Task Force

In 1997 the City of San Jose was selected as one of the first 27 cities in the Nunn-Lugar-Domenici Domestic preparedness Program. San Jose is the eleventh largest city in the United States and the #1 dollar value exporter. Other threat elements include a heterogeneous population, with many groups having their roots in other countries with civil unrest and political strife. Individuals whose previous business and professional lives were in those countries may become targets for the current political leadership from those nations. Because San Jose is heavily invested in high tech and biotechnology commerce, materials for WMD/NBC activities are readily available locally. Toxic gasses and industrial hazardous materials are used throughout the industrial areas of the Silicon Valley.

In April 1997 San Jose received a fax from the Department of Defense announcing the implementation of the Domestic Preparedness training program. In May 1997 the Project Officer from Department of Health and Human Services met with City staff for the first time to begin the development of the San Jose Metropolitan Medical Task Force. The DHHS program required the creation of a response plan specific to a WMD/NBC event.

In May 1997 the Director of the Office of Emergency Services was assigned as the lead for the

San Jose Domestic Preparedness effort. She assembled a committee that represented all the professions needed to create and staff the Metropolitan Medical Task Force. The committee's first task was to write a mission statement and concept of operations for the task force. The original members included City staff members from Fire (Operations, Hazardous Incident Team, Emergency Medical Services, Public Information Officer and Training), Police (Field Operations and Training) and the Office of Emergency Services. County partners included the Public Health Officer, Medical Examiner/Coroner, Emergency Medical Services staff and a Public Health nurse. Private industry representatives were the ambulance company with the emergency response contract and a representative of the local Hospital Council. The Director of OES was the Director, MMTF.

The Director attempted, unsuccessfully, to involve pharmacists and veterinarians in the planning of the WMD/NBC program. The pharmacists had a narrow vision of their role as solely logistics support to hospitals. The veterinarians' association president pointed out that his members could not afford the lost time from their practices to become involved with the MMTF. Furthermore, he was unconvinced that a clear relationship between animal disease and WMD/NBC events existed. (This was before the West Nile Fever outbreak in New York City.)

Once the Metropolitan Medical Task Force Committee was formed, the City of San Jose signed a contract with the DHHS to complete specific portions of the plan, and to develop a list of pharmaceuticals, equipment and supplies, acquire these, and plan for their custody and deployment. City leadership

determined that San Jose would select the enhancement model, using all on-duty personnel as

**Coming up in next month's issue:**

- "Assessing Hospitals and Local Health Departments Emergency Preparedness to a Bioterrorism Event" by Leslee Stein-Spencer, R.N., M.S.

MMTF-trained Task Force members. (Other cities have followed the augmentation model of Washington, DC metropolitan area, with a dedicated team of specific individuals.) With considerable assistance from the DHHS Project Officer, the MMTF Committee developed a plan based on the Incident Command System and the Standardized Emergency Management System, required for State reimbursement of emergency response costs in California. The Fire Department's existing hazardous materials response plan became the basis for the development of the MMTF Response Plan. Related plans incorporated by reference into the MMTF Response Plan included the San Jose Emergency Operations Plan, the San Jose Fire Department response manuals and Field Operations Guide, the San Jose Police Department response plan, the countywide Multiple Casualty Incident Plan, and the newly completed County Disaster Medical/Health Plan. These supporting plans detail patient care and standard operating procedures in the field. In addition, California has statewide master mutual aid agreements already in place for fire and law enforcement resources, and a state coordinating plan for medical resources. The MMTF plan built on these with a focus on the special circumstances of response, responder safety, patient care and interagency operations required by a WMD/NBC event.

DHHS provided a list of pharmaceuticals needed by responders to and victims of a WMD/NBC event. A subcommittee of the MMTF Committee, led by the Fire Department's physician and the battalion chief in charge of emergency medical services, researched issues such as shelf life, storage requirements, multi-use applicability and alternatives to purchase. After extensive research a plan for pharmaceutical purchase and custody was developed. Antidotes for chemical warfare agents are carried on every piece of fire apparatus in a specially designed Pelican case. This packaging guarantees maximum shelf life, as well as

ready accessibility in time of need. Potassium iodide is stockpiled at the Fire Department Emergency Medical Services unit for rapid issuance to first responders in a radiological event. Some antidotes and all of the antibiotics are in the custody of the County hospital's chief pharmacist. They are used and replaced routinely through the various infectious disease clinics (for the antibiotics) and the emergency room (for the antidotes) as an affordable means of maintaining the stockpile. However, because the original quantity was designed to serve 1000 patients, the routine use, over time, may not maintain the current quantities. Sustainment of the pharmaceutical stockpile is the biggest challenge for the MMTF.

Following the week long Department of Defense training classes, the MMTF Committee selected the suite of supplies and equipment needed to augment existing materials for response to a WMD/NBC event. The Committee insisted that all supplies and equipment had to be dual use. New items that could be integrated into regular use would be familiar to the first responders, and routinely maintained in good working order through constant use and regular review. Single use items, such as a sarin detector, would be likely to become unfamiliar to staff, and fail to receive adequate maintenance over time. DOD offered \$300,000 worth of training materials to support the on-going delivery of WMD/NBC response training to the first responder community. San Jose ordered response equipment that could also be shared with the other hazardous materials teams in the County, as these teams are essential mutual aid partners for San Jose. The funds available through the DHHS contract were used to purchase decontamination equipment and equipment storage and transport trailers, so that all the MMTF equipment can be rapidly moved where needed.

**You can find a copy of the San Jose Response Plan for Terrorist Incidents Involving Weapons of Mass Destruction Nuclear, Biological, or Chemical Agents very soon on the NDPO's Common Communication Link (CCL).**

San Jose's MMTF Response Plan development effort was assisted by the development of two user groups. Under the guidance of the Region IX DHHS project officers, a MMTF Cities Group was developed that meets quarterly. The group includes not only the

MMTF cities and the DHHS project officers, but also State health and emergency medical services staff members, Office of Emergency Services staff, and National Guard representatives; and federal partner agencies, such as the Army Reserve and the Coast Guard. These meetings provide a platform for the exchange of ideas, consultation on plan development problems, and presentation of unique solutions that could be replicated in other jurisdictions. The Pelican cases and the hospital custody of the pharmaceuticals were early contribution from San Jose. San Francisco offered well-developed medical protocols and a field aid station concept. Such exchanges of ideas enables all teams to benefit from each other's work, and avoid unnecessary duplication of effort. Through this mechanism draft plans and pharmaceuticals purchase lists were also shared.

The second key users group is the Bay Area Terrorism Working Group, BATWING. Under the leadership of the FBI's Bay Area Terrorism Coordinator, representatives of fire, law, emergency medical services and emergency services meet quarterly. Meetings include presentations by State officials, federal resource personnel, and subject matter experts, such as staff from the Monterey Institute. It is the only arena where all four MMTF specialty professions regularly meet together to share intelligence about WMD. Critical issues in the recent past have included the availability and usefulness of various field detectors, and plans for distribution of Department of Justice grant funds in the future.

The San Jose Response Plan was completed, then DHHS issued a contract extension to pay for enhancements to the biological attack response planning elements. All areas of the plan were enhanced, and whole new chapters were written to detail response guidelines for all phases of biological terrorist attack response: surveillance, epidemiology, medical diagnosis, site and non-site response, and community recovery. This latest version of the plan was just reviewed and approved by the Project Officer and the Office of Emergency Preparedness of DHHS. Future review and updating by the MMTF Committee will coincide with the twice-yearly exercises of the plan, which include tabletop exercises and full-scale field exercises.

The major problems encountered in plan development were related to implementation. First,

training time for existing city staff members is very expensive. Since the San Jose MMTF is an on-duty task force, all Fire and most Police field operations staff members have to receive WMD/NBC training and refreshers. Second, sustainment of the pharmaceutical cache over time is a planning and budgetary problem that is only partially overcome through the hospital agreement. The pharmaceuticals carried on the fire apparatus have to be replaced every three to five years by the department at considerable cost, and with little beneficial use for the old material. Proposals for pharmaceutical leasing, or rotation through military units, are all under discussion but not yet implemented. Third, hospitals are not interested in becoming prepared for WMD/NBC events. They see these as only remotely possible, with a large price tag for staff training, and a space requirement for equipment. Most hospitals choose not to participate in WMD/NBC preparedness, assuming that the County hospital will have to take the patients. In reality, there may be too many patients for all of the hospitals in the valley, let alone the County hospital alone! However, the biggest problem is maintaining the interest of the City Senior Staff members and City Council members in a WMD/NBC response capability, when so many more immediate needs demand attention. Growth, traffic, gang diversion and environmental issues compete with the MMTF for attention and funding. Yet every week news articles demonstrate the reality of the WMD/NBC threat.

The San Jose MMTF Plan is distributed to every MMTF Committee member and participating agency, and to the senior staff of each participating City department. It is also sent to the County mutual aid partners, other California MMTF cities, and State and Federal partner agencies. The plan will be available to law enforcement agencies on the secure LEO website, and to MMTF/Response System community members through the secure DHHS website. Electronic versions are provided on request to fire and law enforcement agencies, medical/health/mental health agencies, and emergency services offices.

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meetings and conferences. She is the author of chapters about terrorism in two books, and numerous articles.

## **NIJ GUIDE NOW AVAILABLE ONLINE**

The **Guide for the Selection of Chemical Agent and Toxic Industrial Material Detection Equipment for Emergency First Responders** from the National Institute of Justice (NIJ) is now available on their website at [www.ojp.usdoj.gov/nij/pubs-sum/184449.htm](http://www.ojp.usdoj.gov/nij/pubs-sum/184449.htm).

The guide provides information about detecting chemical agents and toxic industrial materials and selecting equipment for different applications. Because of the large number of items identified, the guide is printed in two volumes; volume 1 presents the guide, and volume 2 contains the detection equipment data sheets.

In next month's *Beacon*, keep an eye out for an in-depth article about the NIJ's Office of Science and Technology.

## **TWO TEST METHODS FOR PERSONAL PROTECTIVE CLOTHING SYSTEMS IN CHEMICAL ENVIRONMENTS**

By Dr. Paul D. Fedele, Senior Scientific Advisor,  
Domestic Preparedness Program, SBCCOM

The Domestic Preparedness Program uses two different tests to assess the performance of personal protective clothing (PPC) systems in chemical environments. Although measurements of both tests are called protection factors, the quantities are different and have different meanings. We use infiltration tests or absorption tests, depending on the PPC system's characteristics. These tests and the meanings of their results are described below.

### **Infiltration Tests for Level-A PPC Systems**

Level-A protective systems are designed to minimize all exposure to materials in the environment.

For Level-A systems, we apply infiltration tests. These tests measure the amount of chemical that gets into the protective clothing system from the environment. In these tests, aerosols (fine particles, so small that they stay suspended in air) are used to simulate chemicals in the environment. Aerosols are put into the air outside the PPC system and, as people wear the PPC system and move about, the amount of aerosol entering the PPC system is measured. Aerosol concentration is measured in the air beneath the protective system, about the chest, arm, crotch, and leg. The factors equal the concentration outside the PPC system divided by the concentration inside the PPC system. This protection factor tells us if chemicals outside the PPC system get inside. The infiltration test also shows how long it takes for chemicals to get inside the PPC system and how the movements of the wearer influence aerosol penetration. When no chemicals get inside the PPC system, the wearer is definitely protected.

### **Tests for Other PPC Systems**

Not all PPC systems are airtight, Level-A systems. Other protective systems also provide protection against chemicals in the environment. Although chemicals can get inside these systems, the systems still protect the wearer and reduce toxic hazards. To create a toxic hazard, chemicals must be absorbed into the skin. Further, a sufficient quantity of chemical must be absorbed. We perform absorption tests on protective systems that we know are not airtight. Absorption tests tell us if chemicals getting into the PPC system create a toxic hazard to the wearer.

These absorption tests are called Man-In-Simulant (MIS) tests. These tests measure chemical absorption at the skin. In contrast, the infiltration tests measure chemicals in the air beneath the PPC system before the chemical reaches the body. In MIS tests, special samplers are placed on the body under the PPC system. While wearing the PPC system, the test subject performs activities that are often required during response. These activities are performed in a simulant vapor. The simulant vapor is not hazardous. Protective fabric measurements are used to show that the simulant vapor penetrates the materials of the protective system just like the toxic chemical agents of concern. The special samplers absorb the simulant vapor and, from the amount of simulant vapor absorbed by each sampler, we determine how much chemical agent the person

would have absorbed if chemical agent vapor were present in the environment. From the amount of absorption, we determine the likelihood of a toxic reaction if the PPC system were used in chemical contamination.

Measurements from MIS tests are also called protection factors. Unfortunately, the same term was chosen to describe the measurements of both MIS and aerosol infiltration tests. Protection factors from MIS tests equal the amount of absorption occurring when no PPC system is used and skin is bare and unprotected, divided by the amount of absorption occurring when the PPC system is used and skin is protected. Protection factors from MIS tests indicate the levels of hazards presented with PPC systems, compared to without them. MIS test protection factors are determined from amounts of absorbed chemical; they are by which toxic hazard is reduced for people using PPC systems. MIS tests also show how likely toxic effects are if someone uses a PPC system in chemical contamination. By combining MIS test measurements with estimated contamination levels, we show that PPC systems are safe to use in specific, hazardous environments.

### Summary

Infiltration tests tell us if PPC systems leak. They also show how much leakage occurs when the individual moves around and conducts normal activity. Infiltration tests best apply to fully encapsulating, Level-A, protective systems, because these tests measure overall system leakage and show how long it takes the leakage to infiltrate the system. For fully protective, Level-A systems, the aerosol infiltration test should give a high protection factor, indicating very little leakage. When leakage is small enough, hazards are precluded. MIS tests tell us if leakage creates a toxic hazard to the wearer. MIS tests are best suited for systems that are not fully encapsulating. These protective systems do not provide protection factors as high as Level-A systems. We use MIS tests with these systems to evaluate the toxic hazard associated with using the system in a contaminated environment. For protective systems receiving MIS testing, protection factors are not as large as those for Level-A systems, however protection factors should be large enough to reduce toxic hazards to an acceptable level for the given emergency situation.

Domestic Preparedness provides both these test results, as appropriate for specific PPC systems, so that

responders can compare PPC system performance and better determine how various PPC systems can be used safely, in emergency response.

## HOSPITAL EMERGENCY INCIDENT COMMAND SYSTEM PROJECT

**A system developed by the California Emergency  
Medical Services Authority**

Confusion and chaos are commonly experienced by the hospital at the onset of a medical disaster. However, these negative effects can be minimized if management responds quickly with structure and a focused direction of activities. The Hospital Emergency Incident Command System (HEICS) is an emergency management system which employs a logical management structure, defined responsibilities, clear reporting channels, and a common nomenclature to help unify hospitals with other emergency responders.

Based upon the public safety's Incident Command System, HEICS has proved valuable in helping hospitals serve the community during a crisis and resume normal operations as soon as possible. HEICS offers the following features:

- Predictable chain of management
- Flexible organizational chart
- Prioritized response checklists
- Accountability of position function
- Improved documentation
- Common language
- Cost effective emergency planning

HEICS and all of its support material are offered without charge. For more information contact the California Emergency Medical Services Authority at (916) 322-4336; or visit the web site at [www.emsa.cahwnet.gov](http://www.emsa.cahwnet.gov).

### ***WERE LOOKING FOR A FEW GOOD ARTICLES!***

The mission of *The Beacon* newsletter is to be a "marketplace of ideas" regarding WMD preparedness. In order to provide a complete product, we rely on

article contributions from state and local responders, as well as the federal policy makers and program managers. It is our belief that the more views presented in the newsletter, the more interesting and informative each issue will be to our readers. It is our goal to bring you informative, accurate, and useful articles for all members of the public safety sector and the health/medical community.

If you wish to contribute to *The Beacon*, please contact us at [ndpo@leo.gov](mailto:ndpo@leo.gov), or call us at 202-324-9025.

To those who have contributed articles during the past two years for *The Beacon* – we thank you for providing your professional insight into the WMD preparedness field. We do hope that your views and experiences sparked WMD awareness efforts in communities around the country.

#### **Beacon Article Guidelines:**

- ❑ Articles can range in length from one paragraph to four pages. Articles longer than four pages may be continued in subsequent issues.
- ❑ Articles should be typed in single or double spaced lines (whichever is your preference).
- ❑ All articles must include a byline and contact information from the author.
- ❑ Each article is subject to the interagency review process that is established for The Beacon.
- ❑ Articles should be submitted by the 15<sup>th</sup> of each month.
- ❑ Articles can be e-mailed to the editorial staff at [ndpo@leo.gov](mailto:ndpo@leo.gov).
- ❑ Unfortunately, because of severe budget constraints and other rules and regulations, the NDPO cannot pay for articles that are published in the newsletter.

- *The Editorial Staff*

#### **WHAT'S NEW AT THE NDPO**

- ❑ The Information Sharing/Outreach unit recently increased the volume of information/links on the Common Communication Link (CCL). Please visit the CCL, and drop us a line with suggestions or additions to the system at [ndpo@leo.gov](mailto:ndpo@leo.gov).
- ❑ The NDPO reprinted 20,000 additional copies of the "On-Scene Commander's Guide for Responding to Biological/Chemical Incidents." To

receive your copy, call us at 202-324-9025, or e-mail us at [ndpo@leo.gov](mailto:ndpo@leo.gov).

### **A NATIONAL WORKSHOP ON DOMESTIC PREPAREDNESS AND COUNTERTERRORISM**

The Emergency Services Training Institute is sponsoring A National Workshop on Domestic Preparedness and Counterterrorism on March 19-22, 2001 at the Ernest N. Morial Convention Center in New Orleans, Louisiana.

This workshop will bring together representatives from the federal agencies responsible for domestic preparedness and counterterrorism. The workshop is designed to promote the exchange of timely and essential information through presentations, panel discussions, workshops and small- group work. Federal representatives will address the availability of resources and the integration of authority and assets. The representatives will also be available to listen to you and your concerns for your community.

Presenters will represent a variety of federal agencies including CDC, DoD, DOJ, FBI, FEMA, EPA, NDPO, OSLDPS.

Who should attend this workshop? Emergency managers, emergency responders, chiefs, communication officers, public health officials, health care providers, hospital administrators, public works directors, military commanders, prosecutors, and corporate CEOs and security directors.

The Ernest N. Morial Exhibit Hall will feature over 200 vendors promoting their specific products and services in equipment, decontamination, communications, and training.

For more information, call 1-866-878-8900, or visit the website at [www.wmdnationalworkshop.com](http://www.wmdnationalworkshop.com).

**Editor's Note: Items published in *The Beacon* are for informational purposes for the emergency response community. The material submitted does not necessarily imply concurrence from the interagency community represented at the NDPO.**

*The Beacon* is published monthly for members of the emergency response community. Please send articles, comments, feedback, and letters to the Information Sharing Team at the address listed below.

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