Chemical Weapons Improved Response Program (CWIRP)

Playbook

Guidelines for Responding to and Managing a Chemical Weapons of Mass Destruction Terrorist Event

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Part I – Introduction

The Chemical Weapons Improved Response Program

Background

As a result of the growing concerns regarding chemical/biological (C/B) terrorism, Congress passed Public Law 104-201, the National Defense Authorization Act for Fiscal Year 1997. This legislation, through Title XIV "Defense Against Weapons of Mass Destruction," tasked the Department of Defense (DoD) to assist federal, state, and local officials in deterrence of or response to threats or acts of weapons of mass destruction (WMD) terrorism. This effort is commonly referred to as the Nunn-Lugar-Domenici (NLD) Domestic Preparedness Program (DPP).

The NLD DPP called for the following:

- The establishment of a training and exercise program that targets selected cities.
- A national hotline/helpline program designed to receive and process inquiries from the responder community.
- A program designed to identify systematic deficiencies in response capabilities of the community as a whole.

In response to the latter of these objectives, the U.S. Army Soldier and Biological Chemical Command (SBCCOM) developed the Chemical Weapons Improved Response Program (CWIRP). The CWIRP partnered with federal, state, and local emergency response personnel to identify and resolve issues involving chemical terrorist events. A detailed listing of the agencies involved in the CWIRP process is contained in Part VI.

> ***"Today, the gravest danger in the war on terror, the gravest danger facing America and the world, is outlaw regimes that seek and possess nuclear, chemical, and biological weapons."***
>
> ***President George W. Bush***
> ***January 2003***

This Playbook, one of several products of the CWIRP process, serves to identify the key issues that the program studied and provides basic recommendations and guidelines for enhancing response and management of a chemical incident. This document, along with the referenced material in Part VII, provides a comprehensive collection of knowledge of the CWIRP. The Playbook and other referenced documents are designed to build upon the DPP WMD training program awareness and operations training.

CWIRP Playbook

The partners in the CWIRP process formed four functional groups to address the concerns of responding to a chemical incident. These functional groups consist of federal, state, and local experts in the following areas:

- Emergency Response
- Law Enforcement
- Health and Safety
- Emergency Management

The CWIRP conducted a series of exercises called Baltimore Exercise (BALTEX) that consisted of tabletop, functional, and workshop formats to assist members of the functional groups in recognizing the magnitude of a chemical incident and to identify the key issues that needed resolution. Each functional group, through regularly scheduled meetings and workshops as well as the BALTEX exercises, focused on identifying recommended procedural guidelines to address each issue. Many issues also required scientific studies that were conducted by SBCCOM. The Maryland response community supported these studies to ensure that the results were operationally effective.

The CWIRP partnered with the city of Baltimore to resolve issues of response to a chemical terrorist incident.

CWIRP Playbook Concept

The issues covered in the Playbook are intended to be applicable to the majority of jurisdictions across the country (large, small, metropolitan, rural). Jurisdictions and agencies using the Playbook to assist in preparation of plans, policies, and procedures for response to a chemical WMD incident are expected to adapt these recommendations to fit their current level of preparedness and staffing.

The Playbook is written to be as generic as possible. Any mention or reference to an organization or procedure specific to the Baltimore or Maryland area is strictly for clarification and conceptual simplicity.

CWIRP Playbook Outline

The CWIRP Playbook is divided into sections that focus on the sequence of response to a chemical incident. These sections are separated into the following areas:

- Pre-Incident Plans and Procedures
- Initial Response – The First Hour
- Follow-On Response – The First Day
- Long-Term Response and Recovery

Each section identifies the functional group issues and recommendations as they pertain to that stage of the response. The subject matter experts from each functional area supporting the CWIRP derived the list of issues; however, each jurisdiction has its own policies and

ways of conducting business. While there are specific functional areas in each part of the playbook departments and agencies should take the time to scan the issues and recommendations from each area as certain recommendations in one functional area may reference response agencies/actions from another. Users of the Playbook should feel free to adapt the subject matter it contains based on their own experience and expertise.

"The Face of Terrorism"

Though the global incidents of terrorism have waned in recent years, a new and disturbing pattern has emerged. Attacks have come less often, but with far greater consequence. Tools of terror have transformed from guns and Molotov cocktails to nerve gas, massive ammonium nitrate bombs, and even biological weapon attacks. Long-held taboos have been broken. Coupled with this trend is the prospect of state-sponsored terrorism or terrorist activity financed by wealthy individuals. State sponsorship, access to significant financial resources, heightened scientific and technical prowess, and access to information available on pathways such as the Internet may all combine to breach the notion of a technological "glass ceiling" for terrorists. Today's terrorist has the potential to be far more deadly than ever before.

Within the United States, the potential for the use of weapon(s) of mass destruction (WMD) by terrorists has become a major national security concern. The spread of international terrorism has long been a major threat, but law enforcement and intelligence officials are increasingly concerned about the rise of groups or persons within extremist movements in the United States. Fringe elements and various persons within these extremist movements in the United States are examples of this new threat. Bombings in Atlanta, GA, and Birmingham, AL, as well as a rash of biological agent hoaxes in 1998 and 1999, have amplified this concern. These events and concern about the potential for WMD terrorism warrant increasing vigilance and preparedness.

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Part II – Pre-Incident Plans and Procedures

The ability of an agency to respond to and effectively manage a chemical WMD incident begins with the development of departmental plans, procedures, and training. Preparation for responding to a chemical incident should begin with modifying existing plans and procedures to consider and include WMD-specific operations. A chemical terrorist incident is different from a routine HazMat incident in that the terrorist incident:

- Is deliberate in nature.
- Is a criminal act.
- Is designed to produce a large number of casualties.
- Is expected to result in a large number of fatalities.
- Will require mass numbers of people to be decontaminated.

This section outlines the issues and recommendations that departments should consider in advance of the actual occurrence of a chemical incident. These recommendations are based on the assumption that individuals have a basic knowledge of chemical agent awareness and emergency response operations. This information is provided as part of the NLD DPP city "Train-the-Trainer" program.

Multiagency communications pose a major challenge between local, state and federal responders.

Throughout the Playbook, constant reference is made to the need for communications between the various responding agencies. This communication is extremely important to the fire, police, and medical agencies as they rely heavily on each other to successfully manage such an incident. For this communications flow to be effective in an actual response, it must be practiced in multiagency drills and exercises.

It should be noted that agencies should only consider operating in a chemically hazardous environment after thorough training and with proper equipment. Several recommendations are made throughout the Playbook regarding roles, levels of operation, and personal protective equipment (PPE). Departments that do not have trained and equipped personnel to perform such operations should not enter a chemical incident scene. The importance of proper equipment and adherence to PPE safety standards, including respirator fit-test requirements, cannot be overemphasized.

> "Killing Americans and their Allies, civilians and military, is an individual duty for every Muslim… we do not differentiate between those dressed in military uniforms and civilians."
>
> *Usama Bin Laden, 22 May 1998.*

General

Issue: Funding for Chemical Protective Equipment

Other than knowledge and awareness of the hazards associated with responding to a chemical WMD incident, the major issue facing response organizations is the procurement and maintenance of protective equipment. Studies indicate that the respiratory protection most law enforcement agencies currently use for riot control are not suitable for chemical agents and in some cases are prohibited from use by federal safety standards. Other departments may not have any PPE at all (EMS).

Recommendation. Funding for equipment necessary to respond to a C/B event may be available through the federal grant process. The National Domestic Preparedness Office (NDPO) developed a Standardized Equipment List (SEL) to be considered by response agencies. Each jurisdiction should have a representative responsible for collecting and coordinating federal grant requests, and interfacing with state grant POCs. Agencies should contact their city or county emergency management office or Mayor or County Executive's office to identify their representative. Many grants are now being executed at the state level.

Issue: Terrorism Response Plans

Each department and level of law enforcement (local through state) should have a terrorism response plan that encompasses department-specific guidelines in preparing for and responding to acts of terrorism. These plans should also include information specific to WMD incidents.

Recommendation. Municipalities should develop WMD terrorism response plans after a thorough assessment is made of their vulnerabilities. This assessment should outline and identify key areas or events that present targets of opportunity for terrorists. Key historical dates and events, large public gatherings, and locations or meetings with political, social, or ethnic agendas are only a few of the targets likely to provide terrorists a means to present their message. Many states and jurisdictions are conducting these assessments as part of a DOJ grant process.

Plans should outline specific notifications that are to be made once an act of chemical terrorism occurs. These should include local, state, and federal law enforcement agencies as well as local notifications necessary to support the response. Typical types of local notifications may include medical treatment facilities, local health department, fire department, HazMat teams, city and county emergency management, and nearby military bases. Any act of suspected terrorism should be reported immediately to the nearest Federal Bureau of Investigation (FBI) field office. FBI field offices have appointed agents to perform as WMD coordinators for their region. Additionally, field offices supporting the larger metropolitan jurisdictions have trained and equipped these agents to perform limited HazMat operations in support of the local jurisdiction until the arrival of more specialized elements such as the FBI Hazardous Materials Response Unit (HMRU).

Issue: Recall of Emergency Response Personnel

Private ambulance corporations, security agencies, and volunteer fire companies often have a population of part-time civil servant employees who hold full-time positions at other emergency agencies (e.g., police, fire, EMS). During a disaster, many of these people will be recalled to their primary job. This loss of manpower will hinder the ability of private companies to respond to the normal day-to-day operations and leave them unable to provide requested backup to the incident site. Additionally, many of these individuals also hold positions in their State National Guard. This is particularly true in the security, law enforcement, and medical areas.

Recommendation. Agencies should have an accurate count of their personnel who provide emergency service in other capacities. Having a solid understanding of their resource status during a crisis is paramount to supplying a service during a disaster.

Coordination should be made with the State National Guard Headquarters to determine what their recall procedures will be in the event of a local MCI. Several have already determined that they will not recall their personnel who fill emergency positions in the community. They would rather allow them to continue to provide support as part of the community's resources. This, however, should be verified within each jurisdiction and not assumed.

Emergency Response

Issue: Training

Emergency responders (e.g., fire, police, medical) must be trained and prepared to handle any emergency. The responder should have, as a minimum requirement, training that consists of or is equivalent to the awareness and operations level training from the DPP Train-the-Trainer course. All personnel must be aware that a terrorist event can happen anytime anywhere.

Recommendation. Responding to a mass-casualty chemical WMD event will place standard firefighters in positions of possible chemical exposure that are normally only experienced by trained hazardous materials (HazMat) operators. All emergency response agencies should have a designated training officer who will be responsible for all aspects of training and updated information. Recommended training includes PPE, positive pressure ventilation (PPV), decontamination, the use of chemical detectors, and chemical agent information. The reports developed by the Domestic Preparedness Improved Response Program are excellent references and are readily available via the SBCCOM Web site (http://hld.sbccom.army.mil/).

Additional training areas and recommendations can be obtained from the training performance requirements outlined for the Domestic Preparedness city training program. These objectives are listed in Part VIII of this document.

Additionally, any chemical terrorist event will require close cooperation between the fire and law enforcement agencies involved. These agencies should work together to conduct

joint training exercises that focus on the supporting roles that each must accomplish to ensure an effective and safe response.

Issue: Personnel Protective Equipment For Fire / EMS / HazMat

CWIRP studies indicate that turnout gear with SCBA provides sufficient protection to conduct rescue of live casualties with minimal risk to firefighters.

One important aspect of response to any chemical incident is the assurance of proper personal protection equipment for all responders. Test and evaluation studies completed by SBCCOM on PPE have suggested that fire and emergency medical services (EMS) personnel may use firefighter turnout gear with self-contained breathing apparatus (SCBA) as minimal protection against chemical agents for quick response. The responder must realize that this practice in no way replaces the requirements for PPE for HazMat operations. This practice is only to be used for a limited timeframe and considered as an alternate means of quick rescue of **known live victims**.

Rescue personnel may be required to use specialized rescue equipment in addition to standard firefighter turnout gear. This equipment may include rescue helmets, harnesses, gloves, and ropes. Rescuers must use caution to protect such equipment from being directly exposed to liquid chemical contamination. EMS personnel, in addition to full turnout gear and SCBA, must also use additional EMS personal protection as required. This includes eye protection, butyl rubber gloves, and respiratory protection against not only chemical agents but also bloodborne pathogens and contagious diseases. HazMat technicians should operate in their normal levels of protection based on the chemical threat for HazMat operations.

Recommendation. All responders should be trained in proper use and types of PPE for any chemical agent incident appropriate for their role and responsibilities in a response. SCBA is the suggested type of respiratory protection equipment for all fire, EMS, rescue, and HazMat personnel. The SBCCOM report, *Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist Chemical Agent Incident,* is an excellent guideline to use for rescue operations on a chemical agent incident. The Emergency Response Functional Group also recommends that all emergency responders receive the basic WMD Awareness and Operations Training developed by the DPP. A list of DPP performance requirements are included in Part VIII of this document.

Issue: Decontamination

A chemical WMD incident may result in a massive number of people who may require decontamination. For decontamination to be effective, it must be rendered immediately. Firefighters need to be trained and prepared to perform mass-casualty decontamination prior to an incident.

Incident casualties will need to be prioritized for decontamination based on the likelihood of exposure. Additionally, emergency medical triage must be performed to ensure that those requiring immediate or urgent medical care are administered to first.

After emergency triage and prioritization of casualties, the first step of decontamination is to remove as much clothing as the casualties will allow. Studies indicate that up to 80 percent of the contamination on a victim will be removed by disrobing. Convincing the populace to do so will be a challenge to responders. It is also essential that the responders provide as much privacy and gender segregation as possible based on the resources available and amount of agent exposure to the victims.

Disrobing provides approximately 80 percent of agent removal during decontamination.

A bleach solution is not recommended for mass-casualty decontamination operation by civiliam responders because of these factors:

- Bleach solutions may degrade the skin surface allowing greater penetration of the chemical warfare agent (CWA) into the body.
- Flushing with **large volumes** of water at low pressure is highly effective in removing surface contamination and is readily available to any fire department.

Recommendation. For decontamination to be effective for saving lives from rapid acting agents such as GB (sarin) nerve agent, it must be instituted within minutes of exposure. Responders are expected to be able to perform such decontamination only if they are already on the scene when the agent is dispersed. Such instances could include an advance warning of a chemical device, prestaged apparatus/responder at a credible threat location, and backup response element to a tactical takedown of a suspected chemical terrorist or laboratory facility. Outside of immediate response and lifesaving, decontamination is also necessary for more persistent agents such as VX nerve and mustard agents, to prevent cross-contamination between casualties and with rescue personnel and healthcare providers.

The CWIRP *Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident* report outlines several approaches to the establishment of decontamination systems. Departments should carefully evaluate the types of systems outlined in the report and evaluate what levels of decontamination they can accomplish based on their resources. Additional equipment may be procured for mass decontamination operations through the federal grant process. Mass-casualty decontamination must then be incorporated into the department's normal training program.

Large volumes of water are necessary to have any effect on removing agent from the skin.

Studies into the effectiveness of decontamination with water have looked at two aspects of the decontamination process: the volume of water required and the time a

victim should remain in the shower to effectively flush an agent from the skin. Preliminary results indicate that a large volume of water is necessary to adequately flush agent simulants from the skin. This represents the type of water flow that is provided with fire hoses at a low-pressure setting. Lesser volumes of water, such as that provided by a garden hose or mist sprayer only wet the victim's skin and do little to actually remove the agent.

The CWIRP continues to work on further issues involving mass-casualty decontamination. These issues include the following:

- Other means of decontamination to include dry decontaminants.
- Cold weather decontamination.

Issue: Equipment Resources

The response to a chemical WMD incident is expected to be both manpower and resource intensive. A community's level of support can rapidly be overwhelmed. The additional threat of equipment contamination and the requirement to take such equipment out of service for a prolonged period of time can further inhibit the ability to provide normal service to the area. Additional, specialized equipment will also be needed as part of the chemical response.

Recommendation. The Emergency Response Functional Group agreed that the more resources available to the Incident Commander (IC) the better the response to any overall emergency operation could be performed.

Limited stocks of specialized chemical response equipment may be stored on individual apparatus. Backup supplies should be immediately available from in-house stocks and a local network of suppliers and manufactures. Communities should identify what specialized equipment is available regionally to identify military-specific chemical agents. Most HazMat teams have similar types of commercial agent detectors, but they may have limited or no military agent detection capabilities. Every HazMat team should have the basic chemical agent detectors (e.g., M8, M9 paper). These are the simplest form of detectors that any team can use to gain some possible indication of a chemical warfare agent. Other types of detectors such as colorimetric tubes are available and can easily be stored and used by a local HazMat team. Identifying and equipping a regional response asset with enhanced detection equipment for suspected military agents increases the local community's ability to provide a more accurate agent identification prior to the arrival of state or federal resources.

To further deal with the immediate needs during a response, jurisdictions should reevaluate their mutual-aid agreements to determine if any adjustments need to be made in the case of a chemical WMD incident. A list of specialized equipment available in the surrounding areas that may be needed for a chemical response should be established and updated as needed. A method of rapidly determining the serviceability of such equipment should also be developed. Prestaging of such resources may be accomplished in preparation for a special event or in the event of any increased threat of chemical terrorism in an area. To be effective, these types of lists must be readily available to the IC.

A list of suppliers, dealers, and manufactures of fire, EMS, rescue, and HazMat equipment and emergency vehicles is beneficial when equipment or apparatus are declared nonserviceable. This will reduce the time necessary to locate, order, and replace the required equipment or vehicles. In addition, a manpower resource list including department, agency, local, state, and federal names to contact for assistance in expediting emergency requisitions.

Issue: Accountability and Identification

A key component of the Incident Command System (ICS) is the need for accountability. Accountability of emergency personnel, equipment, and apparatus and the identification of victims and personal property are essential. Each sector, as part of its area of operations, should establish some form of accountability and provide the command post (CP) regular status updates. These status reports will permit the CP to quickly gain information and enable the IC to evaluate the overall resources and make any adjustments necessary to control the incident.

Recommendation. In preparing for any incident, it is suggested that all fire, rescue, HazMat, and EMS personnel understand the importance of accountability and to have in place good methods of identification. One method of personnel accountability widely used throughout the fire service is the Personal Accountability Tag (PAT). It is suggested that other response agencies incorporate some form of personnel accountability into their standard practice.

Response agencies should have and maintain supplies for the identification of victims and personal property. A form of bar-coded or sequentially numbered triage tags with peel-and-stick labels is recommended for tagging bags of personal property and other reports so that they can easily be identified without recording each casualty's pertinent information (e.g., name and address) each time.

Law Enforcement

Issue: Pre-Incident Intelligence Sharing

Intelligence information is one of the most important aspects of law enforcement operations to prevent criminal and terrorist events. Information gathering and tracking of individuals suspected of possible criminal intent are key to providing a safer community for our citizens to live in. To provide a complete understanding of the threat, a close information-sharing network should be established between local and state law enforcement jurisdictions.

Recommendation. Law enforcement agencies should designate one or more investigators or officers within their intelligence unit to focus on threats of terrorism. One individual in this network should be responsible for disseminating information to other agencies that are affected. This person should be on the notification lists of private (including defense contractors and C/B research facilities) and public organizations (including fire departments, hospitals, public health, public alerting systems) who may obtain information concerning problems or suspicious circumstances that are relevant to law enforcement

intelligence. It is further recommended that regular intelligence reports be disseminated to the field to keep personnel and commanders informed of trends, symbols, and officer safety information.

A regional intelligence network on terrorism consisting of federal, state, and local law enforcement is recommended. This regional network will keep all levels of law enforcement informed of potential threats or trends that might cross jurisdictional boundaries. Neighboring states should establish an additional network for sharing similar information on trends or threats. In most cases, the likely point of contact (POC) should come from the state police intelligence unit who should act as the conduit between local, state, and federal agencies.

Law enforcement agencies must also consider what, if any, intelligence information can be shared outside of the law enforcement community. If intelligence indicates that an imminent threat exists, pre-notification to response units could aid in the overall response and safety of responders. The sharing of intelligence outside of law enforcement agencies is strictly at the discretion of law enforcement.

Issue: Personal Protective Equipment for Law Enforcement Officers

PPE for officers was a topic of much debate and discussion among the program's participants and organizations. Police officers have experience with respiratory protection through their use of gas masks for riot control. The threat of chemical terrorism however, clearly opens up previously unexplored protection requirements for law enforcement.

Mask fit requirements present a major challenge to departments; however compliance is essential to officer safety.

Occupational Safety and Health Administration (OSHA) respiratory requirements have been mostly overlooked when dealing with riot control masks. Results of this can lead to an improperly fitted mask or a poorly trained officer. In a riot control situation this may pose an inconvenience only to the responding officer; however, the same problem could result in death in a chemical incident response. OSHA Regulations (Standards–29 Code of Federal Regulations [CFR]) 1910.134 define requirements for respiratory protection; however, there are no OSHA standards for Chemical Warfare Agents for civilian respirators.

Many departments possess and use M17-style military surplus masks for their riot control protection primarily because they can be obtained at minimal or no cost. These masks are old, replacement parts are hard to find, and many are unserviceable. Testing a selection of masks used by several departments validated these points. The program conducted two tests on the M17 masks that several departments currently were using for riot control purposes.

The M17 series mask was phased out of military use beginning in 1991.

The first test focused on the serviceability of the masks according to military serviceability standards for chemical warfare agent (CWA) protection. Test findings indicated that masks did not have CWA filters

in them (two of the three filters developed for these masks were for riot control agents only), were dry rotted, and/or had unserviceable components. Even after the masks were rebuilt with serviceable components, one-third of them failed to achieve a seal on the test and evaluation machine.

The second test involved evaluating the fit of the mask to the officers based on the OSHA 1910.134 fit test requirements. Officers were issued masks according to department procedure and donned them based on their current level of training. Even after assistance in properly donning the masks, almost half of the participants were unable to achieve a proper seal to National Institute of Occupational Safety and Health (NIOSH) standards.

The Law Enforcement Functional Group started their investigation of overall officer PPE with two factors in mind:

1. Recommending levels of protection based on the expected role of the officer in responding to a WMD incident.
2. Identifying protective equipment that is affordable, easy to maintain, and capable of withstanding the rigors placed on it by the officers.

Recommendation. PPE was recommended based on the following:

1. The roles of law enforcement in the chemical incident response.
2. The likelihood of contamination in each of these roles.

The basic patrol officer is expected to operate primarily on the outer perimeter of the contaminated area and should encounter little or no contamination. However, because cross-contamination from victims, wind shifts, and secondary agent releases could further spread the contaminant, protection is essential. Patrol officers may also be called upon to perform limited duties in support of decontamination operations on the outer limits of the warm zone.

Affordable, quality protection was the goal of the CWIRP law enforcement PPE study.

Testing was conducted using five protective suits and one officer in standard duty uniform. The ensembles also consisted of a negative-pressure respirator (MCU2P), butyl rubber gloves, and butyl rubber boots. Officers performed motions and functions that they would expect to conduct while operating on the perimeter of a chemical incident (directing traffic and crowd control). Protection afforded from the suits ranged from 17 to 42 times that of an unprotected test subject.

Operations in areas of increased agent concentration require better protective equipment and rely on increased awareness and safe operating procedures to ensure protection of officers. Because of this, specially trained teams are recommended for these missions. The primary recommendation was for Special Weapons and Tactics (SWAT) teams and other specialized teams to fulfill this role since they are already familiar with enhanced training, equipment, and tactics.

SBCCOM, with the cooperation of Maryland State Police Special Tactical Assault Team Element (STATE), conducted a series of tests on several protective ensembles for the basic patrol officer. The results of these tests and a more detailed discussion of PPE issues for law enforcement are documented in a report entitled *Guidelines for Use of Personal Protective Equipment by Law Enforcement Officers at a Terrorist Chemical Agent Incident.* This report is available on the SBCCOM Web site (http://hld.sbccom.army.mil/ in the MIRP section).

Issue: SWAT Tactics and Protective Equipment

Exercises conducted by the IRP and the 120-city training program have brought attention to issues that may require the conduct of tactical law enforcement operations inside of a contaminated area. Such operations may consist of operating in an area where chemical agents have already been released, or where the potential for release is high, i.e. suspected production laboratory (cookhouse) or dignitary protection.

Clothing worn by tactical officers must meet the needs of the mission and be compatible with specialized equipment and tactics. Tactical operations require stealth, a high degree of dexterity, and unencumbered movement. Additionally, the specialized tactical equipment and techniques used by officers can easily tear clothing that is not designed to withstand the rigors of such operations.

Inherently all chemical protective ensembles are cumbersome and hinder communications, dexterity and vision. Many commercial types of protective ensembles however clearly do not lend themselves to tactical operations due to their visibility (bright colors), noisiness of the fabric, and short duration of operation from limited bottled air supplies.

Recommendation. Operating in a contaminated environment requires specific training and knowledge on protective equipment and procedures. As such, it is recommended that departments train members of each of their tactical teams to the HazMat technician level. This is similar to training team members to be "tactical medics". This training would give each team the ability to perform operations such as detection and sampling in conjunction with their tactical mission as the situation and time permits. This can aid in reducing the time necessary to determine the specific agent involved and the extent of contamination. This would also give each team a more definitive understanding of the decontamination process as it pertains to chemical contamination.

Charcoal impregnated or lined protective suits or chemical protective undergarments are best suited to the tactical officer and their operations. The types of chemical protective ensembles depicted include left-Level C charcoal impregnated overgarment, center-Level A, and right-Level B

In order to meet the challenges of tactical operations the CWIRP chose to evaluate several styles and types of charcoal lined/impregnated protective suits and chemical protective undergarments for tactical officers. These types of suits are highly durable, provide very good chemical protection and meet the needs of the tactical officer well. They include chemical protective suits currently in use by the U.S. military and similar types. Unlike suits recommended for patrol officers, the charcoal style suites afford a greater degree of durability to tactical operations such as crouching, repelling, and climbing.

Basic OSHA safety requirements indicate that Level A protection (fully encapsulated suit with self-contained breathing apparatus) is required when an unknown agent or concentration is present. If there are any threats of suspects or additional explosive/chemical devices being in the incident area, HazMat teams are expected to refuse to enter the area until it is cleared by law enforcement. Therefore it is expected that the agent and concentration will not be known and that victim signs and symptoms will be the only indicator of the hazards.

Level A and Level B protection (both requiring SCBA respiratory protection) do not support tactical law enforcement operations. Suits used with Level A and B protection are noisy and generally bright in color, also not lending to stealth operations. While these types of suits can be special ordered from most manufacturers in any color specified, this would not eliminate the noise issue. In addition, the fabric of these suits tear easily and is not expected to withstand even the simplest of tactical maneuvers. SCBA provides for a limited operation based on the air supply whereby officers may be required to disengage from their mission against standard procedures. This is particularly true during stealth operations or when confronting a suspect. Level A protection also does not lend to firing shoulder fired weapons.

SBCCOM, in conjunction with the Maryland State Police, conducting testing on protective ensembles (equivalent to Level C protection) for SWAT teams. This testing is similar to the procedures done for ensembles for patrol officers on the perimeter of an incident. The ensembles being testing include a negative-pressure respirator, butyl rubber gloves and either a charcoal lined/impregnated suit or chemical protective undergarments. The chemical undergarments are worn under the SWAT officers' uniform. Chemical suits are of the military style and include those currently in use by the military as well as others that have been developed for several law enforcement agencies. These style suits provide a better fit with the tactical mission and equipment.

The tests evaluate the ensembles based on the chemical agent protection provided as well as compatibility with the teams equipment and tactics. Results of the testing is published in an overall law enforcement PPE report and available on the SBCCOM Web site at hld.sbccom.army.mil.

Issue: Bomb Squad Tactics and Protective Equipment

Bomb technicians face critical challenges of both agent and explosive hazards when confronted with conventional improvised explosive devices (IED) inside of a contaminated

area or with chemical IEDs. The requirement to search for and possibly dispose of chemical and/or conventional IEDs is expected to accompany any chemical WMD incident. Most bomb technicians are not trained or equipped to operate in a chemically contaminated environment. Standard bomb suits do not provide for any form of chemical protection and already present the wearer with high danger of heat related injury.

Recommendation: As with the recommendation for tactical teams, it is recommended that bomb technicians be trained to the HazMat technician level

There are few chemical/biological (C/B) bomb suits available on the market. These suits are relatively expensive and while providing chemical agent protection in the form of wearing a chemical protective suit and respirator under the suit, afford only approximately 70 percent of the standard blast protection of a standard suit. Recommendations from the manufacturers of these suits also indicate that the filters of a negative-pressure respirator used in conjunction with a C/B bomb suit are subject to damage from a detonation that can render the filters unserviceable. As such, SCBA is their recommendation for respiratory protection.

This type of ensemble presents various limitations for the technician. SCBA limits the time on target for conducting evaluations and render safe procedures to the limits of the air supply. This can call for a rotation of technicians in dealing with a device. Additionally, the suit, with chemical protection worn underneath presents an elevated level of heat buildup above that normally associated with the standard bomb suit.

Technicians should be well trained and experienced in the wear, use and additional restrictions of a C/B bomb suit and operating in a contaminated environment.

Issue: Enhanced WMD Training

Throughout the discussions of the Law Enforcement Functional Group, it became evident that additional training above the basic DPP awareness and operations level training is important to overall officer safety. A list of the performance requirements associated with the DPP training is included in Part VIII of this document. A basic part of any training should also be the awareness of the roles and responsibilities of the other department disciplines.

Recommendation. The functional group considered the types of missions that officers may be required to perform in response to a chemical WMD incident and recommended additional training areas that should be considered. These recommendations are designed to build on the training of the basic WMD Awareness and Operations courses of the DPP Train-the-Trainer course. Jurisdictions that are not scheduled to receive this training should make every effort to obtain the materials from the nearest city that has been trained or state Emergency Management Agency.

Training officers on the proper use and maintenance of any equipment issued for a WMD response is vital. If officers are not properly trained in their protective equipment or it is

poorly maintained, they could have a false sense of security in the protection afforded them. Poor training or improperly maintained equipment can lead to serious injury and/or the loss of lives.

The list of additional training recommendations is included in Part VIII of the Playbook. The group based their recommendations solely on the enhanced training necessary to perform the perceived missions. Time, resources, and funds were not used as limiting factors in the development of the list. Departments must evaluate the recommendations and their available training time and funds when determining what training to conduct for their officers; however, officers who are not properly equipped and trained should not attempt to perform such missions. They should prioritize training according to their current level of awareness. Additionally, elements within a department should be prioritized for training based on the likelihood of being involved in the response.

Issue: Use of Aviation Assets

Operation of aviation equipment by any agency is expected to be prohibited in or near a contaminated area. Medevac helicopters will probably not even fly decontaminated patients because of the potential threat of contaminating the aircraft or pilot. However, aviation assets are a valuable resource to the rapid response during an incident and the program addressed several issues on how they could be more appropriately used during a chemical terrorist event.

Recommendation. Police aviation assets provide ideal rapid transportation means to move specialized teams (e.g., bomb squad and SWAT) and/or equipment to the vicinity of the incident site. Ground transportation will be necessary to deliver equipment from the aviation landing zone to the actual site, but aviation provides a quicker means of supplying needed assets close to the incident. Medical facilities closest to the incident site will most likely be rapidly overwhelmed and will quickly run out of necessary medical resources (e.g., ventilators). Strategic movement of key medical personnel, equipment, and antidotes to a location close to the incident site or medical treatment facilities can be best accomplished by using aviation assets.

Aviation assets provide a means of rapidly delivering critical response teams and equipment to a region involved in a chemical terrorist incident.

The need to provide rapid analysis of a known or suspected agent provides another avenue for aviation support. This is particularly true where the agent has not yet been disseminated and containers of the suspected agent are taken into custody. Coordination to analyze the agent should be done in conjunction with the FBI; however, local aviation may be asked to transport the substance. Law enforcement agencies should check with their local FBI office and state police departments to ascertain how movement of known or suspected chemical agents can be accomplished. Clearance to use local aviation assets should be outlined in a memorandum of understanding (MOU). Local jurisdictions should also check with their aviation insurance agency prior to signing an MOU.

Issue: Antidote Kits

The only military chemical warfare agents with a specific antidote kit are the nerve agent series. Autoinjectors of atropine and 2-PAM chloride make up the components of the MARK I Nerve Agent Antidote Kit. These kits are a controlled medical item, have a limited shelf life and strict security and storage requirements, and can only be administered by certain levels of medical personnel. To be useful to anyone exposed to a lethal dose of nerve agent, they must be administered within seconds to minutes after exposure.

Mark I Nerve Agent Antidote Kit

Recommendation. The stringent requirements of the MARK I antidote kits make them improbable to be issued to each police officer on a permanent basis. The best protection officers have is rapid identification of the hazard through visual observation, distance from the source of contamination, and appropriate protective equipment. Officers who receive a nonlethal dose of agent should be removed from the source of contamination and be attended by medical personnel as soon as possible.

Police departments may consider stocking antidote for specialized teams such as SWAT teams through agreements with local medical organizations that are maintaining these items for a community medical response. These specialized teams can then be outfitted with antidote prior to a mission where nerve agents have been released or are suspected. Departments should also check into the possibility of gaining a waiver for such operations that would allow officers to administer antidotes.

In any situation where antidotes are or may be provided to law enforcement officers, proper training and precautions must be conducted.

Health and Safety

Issue: EMS Personnel Administering Antidote Treatment not within Their Scope of Practice

In a chemical weapons (CW) incident the prevailing concern is to carry out a system of care that provides the greatest good for the greatest number of patients. Early decontamination, early treatment, and quick access to definitive care will greatly increase the number of survivors. Health concerns are greatly reduced when victims receive antidotes at the earliest possible moment.

Local jurisdictions need to address protocols for emergency medical practitioners to administer antidotes.

The constraint, however, is that the scope of practice for Emergency Medical Technicians-Basic (EMT-B) and EMT-Paramedics (P) generally does not allow for the administration of antidotes. Departmental, regional, or state governing bodies do not include protocols that address exposure to

chemical WMD. At best, these protocols may only specify certain instances or extreme circumstances where providers may act outside their scope of practice. Examples of this include failure to establish radio communication with medical command, lengthy transport time, that the provider has been trained on the procedure, or if failure to act would result in certain patient death.

Recommendation. The National Highway Traffic Safety Administration (NHTSA) and EMS governing bodies including the National Registry of EMT should develop protocols that address the treatment of patients who suffer CW exposure.

Medical directors for the local EMS system and public health agency should review the principles of rendering care to the CW victim, (i.e., decontamination then treatment), as well as the specific antidote needed for different types of chemical weapons: what is administered, how much, how is it administered, contraindications, and constraints to administration.

The medical director needs to oversee the treatment of multiple patients, specifically the administration of antidotes at the scene.

When medical direction is not available at the scene, jurisdictions should work out a plan that encompasses rendering CW antidote treatment at the scene, either by a predesignated Metropolitan Medical Response Team (MMRT), Go-Team, or similar responding unit.

Issue: Stockpiles of Antidote and Equipment to Include Distribution Plan

Often the number of patients requiring treatment outweighs the medical supplies for a CW event. CW-specific medications like atropine, pralidoximechloride (2-PAM CHLORIDE), diazepam, methlyprednisone, British Anti-Lewisite, bronchodialators, IV fluids, cyanide kits, or equipment such as respiratory support devices may not be stocked in a large enough quantity or at all by smaller jurisdictions.

Stockpiling medical supplies also requires specific planning. All drugs have an expiration date, thereby requiring the stock to be rotated to avoid unnecessary disposal. Medical equipment must pass regular biomedical inspections as well as be replaced when models become too antiquated.

Stockpiling CW medication and supplies raises the questions of who is responsible for the maintenance of the medication and equipment, where the stockpile should be located, and who will pay for it because the cost of maintaining such resources may be beyond the capability of many jurisdictions.

Furthermore, once a stockpile is in effect, how it is distributed throughout a jurisdiction and subsequently brought to the incident site must be resolved.

Recommendation. The health department should assist area hospitals and jurisdictions in designing their antidote treatment stockpiles and medical equipment in preparation of a CW attack. The health department should maintain a central database of resources collated by hospital or jurisdiction, that specifies the types and quantities of antidotes and medical equipment available. A comprehensive plan requires input from EMS, hospitals, and the

health department to provide a coordinated medical response to the community. MOUs should be developed between these organizations to outline stockpile and distribution procedures and responsibilities.

Each jurisdiction should address a pharmaceutical product list, medical equipment list, and storage locations for the items specific to that of a CW event. An example of this type of list is the Seattle, WA, MMRT pharmaceutical product list that includes ciprofloxacin, 5 percent dextrose in water, albuterol, atropine 2-PAM Chloride autoinjection kit (MARK I kits), atropine preloads, diazapam, methylprednisone, aminophyline, cyanide antidote kits, and potassium iodide.

Multiple stockpile locations should be established because any area is subject to a terrorist attack. If the stockpile is only in one location and that area should become gridlocked secondary to the attack, supplies will not be accessible. Location of the stockpile should be easily accessible for fire department and EMS personnel or any personnel who retrieve the resources.

The health department's role is to facilitate the distribution of needed antidote treatment and medical equipment in a disaster. Patients will not evenly distribute themselves as they enter the healthcare system. Often one or two hospitals will become the primary site for treatment, thereby requiring more antidote and equipment than originally stocked. The health department should facilitate redirecting stockpiles to hospitals or off-site treatment centers administering to the CW victims.

An MOU is needed with the agency responsible for delivering the stockpile to the incident site's treatment location. Agencies that can be used include fire departments, EMS agencies, mass transit organizations, taxi cab services, public works, private ambulance services, and helicopter transport. Redundancy plans should be made because many agencies may be unable to deliver stockpile items.

Issue: Predetermination of Off-Site Casualty Relocation Centers

A CW terrorist attack can produce an enormous number of casualties that can overload a community's healthcare system. Not all chemical agents are quick acting or result in immediate casualties or fatalities. It is anticipated that some victims will leave the scene contaminated and attempt to seek medical care on their own. They will turn up at their private doctors' offices, managed care organizations, and local emergency departments (EDs). They have the potential to contaminate their own homes, the local population, and anything they might encounter after an incident exposure.

Alternative care facilities, established in schools or similar structures, allow existing medical treatment facilities to focus on critical care patients.

Most hospitals will not be able to manage the vast number of victims from a CW incident and, more importantly, they will not be able to decontaminate victims as they arrive. To effectively manage the health and safety of a large number of patients, the public health department will need to institute temporary off-site treatment centers that can provide immediate access to definitive care.

These centers are referred throughout this document as the Off-Site Triage, Treatment, and Transport Center (OST^3C).

Recommendation. The Emergency Operations Plan (EOP) should identify public buildings that can be temporarily converted to an OST^3C. In most community evacuation plans, schools or armories are used to house civilians in the event of a natural disaster. This plan also endorses the use of schools because they support the requirements of an OST^3C better than most public buildings. The health department or other governing body responsible for operation of the OST^3C will need to establish a written MOU with school superintendents and other support agencies essential to its operation. Provisions for dismissal of students, building security, and opening of the facility during nonschool hours should be predetermined and outlined in the OST^3C response plan.

It is possible that a building may not be able to be fully decontaminated after it has been used as an OST^3C; therefore, it is recommended that the health department select older facilities when choosing a site, in the event that the structure needs to be torn down and rebuilt.

The facility will need to house and care for a large number of victims. It needs to have water, restrooms, food provisions, furniture, electricity, and heating. Schools contain the needed human services to maintain and sustain patients because they already have amenities such as chairs, desks, cafeterias, water fountains, auditoriums, bathrooms, and a nurse's office with beds, chalkboards for information tracking, and public announcement (PA) systems and televisions.

High schools or middle schools should be used before elementary schools. Both high schools and middle schools have larger gymnasiums, locker rooms, separate shower facilities, and large athletic fields; most elementary schools do not have these facilities.

Another important reason in choosing a high school is that teenagers are able to take care of themselves if the school needs to be dismissed midday. Additionally, most parents would be more hesitant to send their children back to an elementary school that was potentially contaminated than would parents of older children.

Issue: Medical Emergency Operations Plan

Many cities or jurisdictions do not have a comprehensive EOP that addresses a chemical WMD event. A CW event demands the management of multiple resources in a timely manner to a greater degree than most communities are familiar with. The lack of such a specific plan will lead to confusion regarding how a city can implement medical command and control for a mass number of patients. There is a great potential to overtax the medical community's local, regional, and state resources.

Recommendation. Cities can easily supplement existing EOPs with a chemical WMD annex (Atlanta, GA's Metropolitan Medical Response System [MMRS] Plan is a good example, Health and Human Services, 1997). The written plan should provide a template that community leaders can organize and execute quickly, that specifies the medical

response at strategic locations, and that addresses the level of care commensurate with available resources.

The annex should address hospital preparedness to a CW event since scene victims and the "worried well" will try to enter community EDs, and will likely contaminate medical resources. Patients from a CW event will require decontamination prior to treatment and particular medications. In most systems, hospitals are not accustomed to enacting their own Incident Command System (ICS) to control this large influx of contaminated patients. Information pertaining to establishing a hospital ICS can be found in the Hospital Emergency ICS (HEICS) manual.

The annex should also address the health department's role in a CW event, since the larger population may be affected by contaminated animal carcasses, delay in routine medical care (e.g., dialysis), victims who may inadvertently contaminate family members, large numbers of deceased, and those psychologically hampered by the event. An off-site treatment center can be used to provide command and control over public health concerns. A thorough description of the OST^{3}C is published in the *An Alternative Health Care Facility: Concept of Operations for the Off-Site Triage, Treatment, and Transportation Center (OST^{3}C).* This document is available at the SBCCOM Web site: (http://hld.sbccom.army.mil. in the MIRP section).

The annex should also include the local or regional poison control center (PCC). This 24-hour service could provide specific first line information about a CW substance or may help in the general identification of a CW agent. Identification is the key to successful decontamination, treatment, and containment. Making PCCs part of the solution includes becoming part of the communication link that would provide information to call-in patients, primary care physicians, and hospital EDs. Information provided should focus on the location of an OST^{3}C and hospitals open for patient referrals as well as proactively faxing local area hospitals the CW agent characteristics, exposure signs and symptoms, latent effects, and treatment protocols.

Issue: Emergency Notifications throughout Medical Community

A major CW incident will rapidly overwhelm a community's medical system. The Tokyo, Japan, subway attack in 1995, which used a low-quality sarin and was poorly disseminated, resulted in more than 5,000 people seeking medical care.

When a CW incident occurs, the larger medical community is unaware of the event and its need to respond and prepare. Medical staff schedules will change to a 12-hour shift requirement, staff may need to be called back to their place of employment, and other medical providers must be contacted to relieve the present staff. Other agencies, including the local health department, primary care physicians, local clinics, nursing homes, and surrounding EDs must be notified of a CW incident to avoid spreading the contaminant.

Recommendation. The local health department should develop a notification process to include the aforementioned medical sites. If there is no central notification center in place (e.g., the Emergency Medical Response Communications [EMRC] center in Maryland), then one governing body should be notified by the IC from the scene that a CW incident has

occurred. In turn, they should notify via telephone or radio all the other healthcare parties. A notification protocol should include calling these groups as well as faxing them information pertaining to the chemical agent. Faxed information should address the type of agent, need to limit access to the site, need for decontamination, need for medical personnel to wear protective clothing, patient signs and symptoms, and treatment recommendations.

Preestablished chemical reference notebooks should be developed and on hand at all medical treatment facilities to enhance agent recognition and treatment procedures in response to a chemical WMD incident.

Issue: Patient Tracking

There is a great need for patient tracking. As evidenced in the Oklahoma City bombing incident and other mass-casualty incidents (MCI) (e.g., recent aircraft crashes), there is a great demand for information concerning citizens who may have been affected by the incident. The identification of victims and deceased, location of patients, and notifications to family members are massive undertakings of the medical and local communities. Additionally, the fact that a crime has been committed makes identification of all persons at the scene necessary for the law enforcement investigation.

Patient identification and tracking must begin immediately. EMS must track patients as they are triaged, decontaminated, treated, and transported from the scene. Patients will be separated from their belongings as well as other family members as they are processed through the decontamination and medical system. Relatives from across the nation will seek information on family members whom they believe were at the location of the attack.

Hospitals also need to keep track of those patients who enter the medical system who were a part of the CW event. These patients may or may not enter the system by EMS, whereby patients would be tracked via a field triage tag. Having a database that supports the care rendered helps with many other facets of the CW event, without duplicating patient tracking mechanisms.

In a CW event not only do patient belongings become part of the criminal investigation, but medical treatment, specimen results, and patient outcomes are important factors to investigators. Additionally, suspects may be among the victims treated by the medical system. This further increases the importance of collecting and tracking information on everyone from the incident.

Recommendation. The initial contact and first attempt at identifying and tracking patients will occur inside the hazard area by fire and EMS. In the interest of providing immediate decontamination to casualties known or suspected of being contaminated, any means of written identification and tracking is too time consuming. It is possible that some citizens may slip through the medical system after undergoing decontamination by seeking aid on their own or refusing assistance. The importance for law enforcement to identify and interview everyone from the scene makes this additional attempt at identification essential. A unified means of collecting patient information from the scene, hospitals, and off-site treatment centers is recommended.

Many EMS systems are currently using the MET TAG triage tag. In the interest of time, basic information such as name, date of birth, chief complaint, and destination, should be recorded on a color-coded triage tag. The tag itself should be waterproof, since water-based decontamination will break down this method of patient tracking. The tag should have several bar-coded stickers that could be easily placed on bags of patient belongings, destination rosters, and hospital charts. Off-site treatment centers and hospital EDs should also use the same system, since linking the mass numbers of patients from the event is necessary.

The triage tag method should be supplemented by an uniformed means of patient charting that is used by hospital ED and off-site treatment centers. Data collection should be simple and basic because medical, volunteer, or administrative personnel would not be familiar with the forms. Additionally, the form should have a bubble-scanning sheet attached to aid the downloading of data at a later time.

Because the CW event will be an ongoing criminal investigation, the list of victims should be maintained separately from normal records.

Issue: Hospital Decontamination Area/Plans

It is expected that any CW terrorist attack will involve multiple victims, many who will flee the scene without being decontaminated. Hospital ED are generally not suited for mass decontamination of patients because the Joint Commission Association of Hospital Organizations (JCAHO) does not require a specific area, but only a means of decontaminating single patients. Hospitals rely heavily upon the fire department to assist with patient decontamination; however, during a CW event, these resources will be dedicated to the incident site and may not be available.

Hospitals need to be prepared to execute mass-casualty decontamination with their internal assets.

Presently, most hospitals generally do not have a decontamination area or PPE to prevent cross-contamination or the experience to perform mass-casualty decontamination.

Recommendation. Hospitals need a written decontamination plan as part of their in-house disaster response. This could be an annex to their current emergency preparedness plan. This annex should follow National Fire Protection Association (NFPA) 471 and 472 recommendations as well as uphold OSHA 1910.120 decontamination standards. Hospital administrators could use *Managing Hazardous Material Incident Medical Management Guidelines for Acute Chemical Exposures* when writing their response plan (HHS, 1991).

Hospitals that may not be able to supply a permanent decontamination area should look into procuring a portable decontamination unit. The portable decontamination unit could be as simple as a fire hose connected to a fire hydrant. It is important to note that a garden hose will not provide sufficient water volume or pressure to provide effective decontamination.

Hospitals should have at least Level C PPE for their ED staff to perform patient decontamination.

Hospital EDs can also establish an MOU with fire departments from outside their community to assist with the decontamination of patients in the event of a CW incident. However, these resources may also be involved in the response to the incident site and, therefore, not be available. Essentially, there is no reliable substitution for a hospital having its own stand-alone decontamination system.

In response to the growing concern for HazMat and chemical WMD, JCAHO should consider updating its HazMat requirements by mandating hospitals to maintain a decontamination area that can service multiple patients as well as mandating a management of CW casualties training course as part of the hospital employees' annual training.

Issue: Hospital Training on Triage Protocols

Hospital EDs are the number one patient entry point. In light of a CW event, triage and treatment of a multitude of patients differ from that of routine triage. Though hospitals are required by JCAHO to practice internal disaster drills, they are not encouraged to use the EMS system of triage. Linking hospital EDs to the EMS system allows for continuity of triage practice and patient tracking that is necessary for a CW event.

Recommendation. Hospitals should provide a CW exposure module as part of their annual training. This module should focus on the priority of decontaminating prior to patient treatment, wearing PPE by hospital staff members, using the EMS method of triage (Simple Triage and Rapid Treatment [START] medical triage system), triage tags (MET TAG), patient and equipment tracking, and the medical management of chemically exposed patients. Training should be extended to hospital administrators as well. CW patient care should fit into preexisting internal disaster plans and be practiced as part of the JCAHO biannual drill.

Training should also emphasize the large number of worried well that will report for medical evaluation and treatment following such an incident.

Issue: Hospital Resupply

In a CW event, the need for antidote medication and medical equipment supersedes that of supply. Since a multitude of patients demand similar treatment modalities, medications such as atropine, 2-PAM chloride, British Anti-Lewisite, and cyanide kits will quickly become depleted. Medical equipment, including nebulizers, ventilators, cardiac monitors, stretchers, and beds, will also become exhausted.

Hospitals today practice "just in time" delivery as a means to cut inventory costs. This practice demands a strong reliance on area distributors. In a disaster situation, distributor stock will deplete quickly since all area hospitals maintain the same practice and rely on the same local distributors.

As part of cost saving measures, hospitals are not inclined to financially support the stockpiling of equipment and medications. Medications need to be rotated to avoid expiration. Additionally, equipment needs to be updated through hospital biomedical departments as well as be replaced when older models become antiquated.

Recommendation. Each hospital should plan to have its own stockpile that is specific to items needed to treat victims from a CW event. Hospitals can add these items to their central supply department and their backup warehouse. Another backup plan should include obtaining an MOU from the area distributors for support during times of crisis as well as MOUs with further outlying and possibly bordering state medical facilities.

Upon the depletion of stock, the Federal Response Plan's (FRP's) Emergency Response Plan No. 6 specifies federal aid when jurisdictional and regional supplies are totally consumed. Also, the FRP can be used to supply temporary mass-care facilities with necessary stock for the treatment of patients in disaster situations. Local plans should be developed so that they are complemented by federal and state response plans. Hospitals should seek assistance from the public health department regarding stockpiling and resupply of chemical antidotes and other essential equipment.

Issue: Medical Examiner Disaster Plans and Resources

The CWIRP recognized the need to address mass-fatality management because a WMD incident has the potential to kill a large number of exposed personnel and most jurisdictions are not prepared to respond to a catastrophic number of fatalities. The CWIRP formed a specific working group to address the issues of fatality management that evolved from a series of workshops focused on scenarios of different proportions based on a chemical agent incident.

Medical examiners will need training and equipment to conduct investigations with the FBI on a chemical terrorist incident.

Disaster plans need enough structure to provide staff direction during a crisis, but also need to be flexible enough to grow or shrink as the situation presents. Often the medical examiner is unfamiliar with its agency's role in a disaster. This is especially true when the incident is extremely large and involves aspects that they are unfamiliar with (e.g., contamination). Medical examiner office personnel should have a clear understanding of their role during a disaster. Typically three operations must ensue. These are the field operation at the incident site, establishing and operating a Family Assistance Center/bereavement center, and handling the daily influx of cases. As the incident size grows larger, outside assistance must be enlisted to help process the remains.

Recommendation. Medical examiners are not put in the position of fulfilling an emergency responder role and, therefore, are not accustomed to performing annual disaster drills and reviewing their disaster plans. Personnel are not prepared to put plans into operation, don PPE, evacuate their location, set up temporary off-site operations, or coordinate activities with an on-scene IC. Because of the catastrophic potential of a

chemical terrorist attack, preplanning will provide the needed structure to implement an effective operation.

Disaster plans should include specific supply lists for required functions (e.g., temporary morgue and temporary autopsy area) so that when a request is made to the Joint Operations Center (JOC), the request is clear and concise (e.g., specific physical requirements and disposable supplies).

Disaster plans should address an evaluation team that is capable of entering the hot zone to assess the situation early. Regional FBI offices are training and equipping their WMD coordinators to perform operations inside the contaminated area. A joint operation between the FBI and medical examiner will assist in developing the operational plan for processing the crime scene and fatalities. This can only be accomplished if the medical examiner is trained and equipped to perform this role.

Managing chemically contaminated remains requires equipment that the medical examiner does not use on a daily basis (e.g., PPE, ventilation fans, decontamination supplies, waterproof tracking tags). The jurisdiction should know what other agencies can provide so that the medical examiner does not make requests for state assets that can be provided locally (the local HazMat team may be able to provide resources to support decontamination efforts since mass fatality management will likely not be initiated until after all live victims have been rescued).

A direct phone line should be established between the Family Assistance Center/bereavement center, the main medical examiner's office, and the temporary morgue, if one is established. This direct patch allows medical examiner personnel to obtain and deliver information quickly and keeps all parties abreast of pertinent information.

A Family Assistance Center should be established early because it can serve as a central location for a representative from the medical examiner's office to speak with family members for identification purposes. Establishing a Family Assistance Center will likely be a joint endeavor between agencies such as the medical examiner's office, health department and Red Cross.

Issue: Patient Identification

Law enforcement needs a complete list of personnel who were at the CW terrorist incident. Many times this cannot be obtained through the EMS triage and transportation lists because patients flee the scene attempting to enter the healthcare system independently. Under normal circumstances, when law enforcement agencies attempt to gather information by requesting patient information from off-site treatment centers, EDs, and mental health (MH) clinic registries, it is denied on the basis of patient confidentiality.

Recommendation. Healthcare facilities already gather information needed by law enforcement agencies. An MOU should be established between law enforcement and the local health department that allows facilities to share the needed information during a mass-casualty event that is caused by a suspected criminal act (e.g., CW terrorism).

Additional information about patients can be gathered by healthcare facilities that would aid the investigation process, such as name, phone number, location at the incident site, if they were contaminated and if they witnessed any suspicious behavior.

Emergency Management

Issue: Vulnerability Assessment

Emergency management planning for response to WMD incidents must include an accurate and realistic assessment of the likelihood of such incidents, the potential targets, and the resulting impact on the public and infrastructure. Such planning helps maximize the effectiveness of resources dedicated to consequence management by helping planners' appropriate training, equipment, and personnel in the right places. Factors to consider for a vulnerability assessment include the following:

- An estimate of the probability and characteristics of incidents.
- An estimate of potential human, property, and business impact.
- An assessment of the adequacy of emergency response plans.
- An assessment of the adequacy of personnel training.
- An assessment of the adequacy of response material resources.
- An assessment of the availability and response times for outside support.

Recommendation. Emergency management personnel should ensure that a vulnerability assessment is a fundamental part of their overall planning for WMD consequence management. This assessment should be updated on a periodic basis to ensure that response and emergency plans stay current. Emergency managers should enlist the involvement of all agencies involved in the emergency response and management of a CWIRP incident in their planning. Additional information regarding law enforcement intelligence gathering and assessments is included in the law enforcement sections of this report.

Issue: Training and Exercise Opportunities

Events such as the Tokyo subway attack, using nerve agent and a plethora of anthrax hoaxes, have certainly heightened awareness to the potentiality of WMD events occurring on U.S. soil. This threat, being relatively new, has consequently resulted in training opportunities offered by many organizations and agencies both in the government sector from the federal to local levels and in the private sector.

Most notably at the federal level is the DPP sponsored training and exercise program fostered by the NLD domestic preparedness legislation of 1997. This program targets selected major metropolitan areas and cities for a training program that features a week of classroom-oriented training, a chemical tabletop exercise, a chemical functional exercise, and a biological tabletop exercise.

The range of opportunities varies widely among states and local municipalities. The National Fire Academy and other such professional training organizations have endeavored

to incorporate WMD awareness into their respective curricula. Likewise, commercial enterprises and academic institutions have spawned a number of activities and courses that address preparedness in the emergency management and responder communities. The National Domestic Preparedness Consortium conducts training at five locations throughout the U.S. These include the Center for Domestic Preparedness, Fort McClellan, AL; Louisiana State University; Texas A&M; the Department of Energy Nevada Test Site; and the New Mexico Institute of Mining and Technology.

Conferences and symposia are also beginning to directly address WMD consequent and crisis management issues challenging the law enforcement, medical, emergency response, and management communities. These forums present an excellent venue for the exchange of information and updates in the fields concerned with WMD consequences.

Recommendation. Emergency management and other officials who plan and influence policies related to WMD consequence and crisis management should actively pursue the benefits of such training and exercise activities.

Issue: Materials Support

Most materials required for use by first responders and the medical community for WMD situations are certainly not common items. These include nerve agent antidotes, chemical protective masks, chemical detectors, decontamination agents, detectors, and anthrax vaccines. Community awareness of the capability and availability of the equipment is increasing. Questions arise regarding exactly where one might readily find such information.

The Federal Emergency Management Agency (FEMA) Web site is a good starting point. FEMA's Rapid Response Information System Web page provides information to those who have access to the Internet. Again, state level support and information sources vary widely; however, the state level emergency management agency most likely has direct access to other sources. Mutual-aid support agreements among local jurisdictions should address availability of WMD-related equipment as part of contingency plans.

An additional resource support might be those assets owned and controlled by nearby military installations and other federal government organizations. The protocols for acquisition of these assets may be a bit involved but they should not be ruled out as a possible source of support.

An inventory of local jurisdictional WMD-related equipment should be conducted. This, along with a WMD vulnerability assessment, should identify material gaps that must be addressed either with the acquisition at the local level or covered in some fashion through support from outside sources.

Recommendation. Emergency management officials should identify assets available at the local level up to the federal level and prepare contingency plans to incorporate those elements of support. This should include lists of suppliers, dealers, and manufacturers of equipment that may be used during a chemical incident response. This information will reduce the time necessary to locate, order, and obtain equipment consumed or determined

to be unserviceable. Information regarding funding for equipment is referenced at the beginning of this section.

Part III – Initial Response: The First Hour

Rapid response to a chemical terrorist incident is essential to save lives and prevent further casualties. The initial stages of response are also the most dangerous to the first responder. Responders rushing to the scene of a chemical attack who are not well informed, prepared, or properly equipped will most likely become part of the problem and not the solution. **The ability of a jurisdiction to contain and control the extent of damage done by a chemical terrorist event will be decided within the first hour of the incident.**

Lessons learned from the response to the bombing of the Alfred P. Murrah Federal Building in Oklahoma City indicate the need for rapid control over the response to a catastrophic event. Control over the response to this event and accountability of the responders on scene were not gained until the threat of additional explosive devices caused evacuation of the area. The impulse to hurriedly rush into an event to save lives without proper precautions can be deadly to responders. This danger is magnified in the presence of an invisible, super-toxic, chemical warfare agent.

This section outlines key issues and recommendations that are of immediate concern to a jurisdiction faced with responding to this type of event. It includes issues relating to the rescue of victims, responder safety, and operational procedures to prevent contamination of personnel and facilities involved in the management of the response effort.

> *"Keep in mind, the same technological advances that have shrunk cell phones to fit in the palms of our hands can also make weapons of terror easier to conceal and easier to use."*
>
> *(President Clinton's State of the Union Address, January 2000)*

General

Issue: Dispatch

Dispatch and 9-1-1 operators are the eyes and ears of the responders until they arrive at an incident scene. The best-trained and equipped responders can still easily become casualties during their initial response if they do not have advance warning of the situation. Standard HazMat situations preclude knowledge of a known hazardous substance and involve a limited number of immediate casualties. A chemical terrorist incident is expected to be different in that the agent release will be a deliberate attempt to injure or kill large numbers of victims and the actual dissemination may go completely unnoticed.

Dispatchers need to be trained to identify potential chemical incidents and provide direction to responders to keep them from becoming casualties.

Operators need to be trained to recognize information that indicates a chemical mass-casualty event and should be knowledgeable of pertinent information to ask once a chemical event is suspected.

The dispatch process is not much different for a CW incident than any other request for service. It starts with the initial caller telephoning the 9-1-1 operator and requesting emergency help. The caller can be an invaluable resource of information for the emergency responder handling any emergency incident. It becomes imperative for the 9-1-1 operator to ask a standard set of questions, such as the following:

- What type of emergency you have (e.g., fire, EMS, police).
- Caller's name.
- Caller's location.
- Caller's telephone number.
- Location of the emergency.
- What type complex is involved (e.g., house, building, school).
- Is there a fire or was there an explosion?
- What type of vehicle, container or device is involved?
- What type materials or chemicals are involved.
- Has anything spilled?
- Do you see smoke or a vapor cloud?
- Do you hear a bursting or hissing sound?
- Has anyone complained about an unusual odor?
- If there are victims and how many.
- What victims' complaints are.
- Weather conditions at the scene.

Although dispatchers gather valuable information and update responders, they are generally not decision makers. The dispatch center often takes a supportive reactive role by responding to the requests of the IC during disaster events, versus disseminating information into intelligence, which is left to the IC. Thus, initial command and control of a CW incident should start with the dispatch center, but often are left to those who respond to the scene. The role of the dispatch center during a CW incident will become more prominent as the incident escalates. Like all disasters, the dispatcher will need to maintain control of multiple radio transmissions over multiple channels. At this point the dispatch center takes a position of interpreting information from multiple POCs and relaying that information to the IC.

9-1-1 Operators provide the communication link between victims on the scene and emergency responders.

One major concern is that quite often no standard requirements for emergency dispatch centers exist. This lack of standardization will affect how a jurisdiction handles a CW incident and what role the dispatch center will play during a disaster. Many jurisdictions may not have modernized equipment to support their present operation. It is anticipated that even a modern dispatch center would be overtaxed during a CW incident.

Law enforcement officers may become casualties either from being on scene at the time of agent release (e.g., sporting event) or by rushing into a scene without proper precautions. In these cases it is likely that a report of an "officer down" would be placed. Dispatch operators are essential to linking the information on a chemical incident with the cause of the officers' problem to keep other responders from rushing into the scene and becoming additional casualties.

Recommendation. Effective communications is the number one priority needed for the successful command and control of any incident. The functional group suggests that all emergency agencies do at least an annual test, evaluation, and update to all 9-1-1 and dispatch centers. Some additional resources that may be needed to effectively handle a CW incident include the following:

- Additional 9-1-1 operators and dispatchers.
- Additional 9-1-1 and telephone trunk lines in and out.
- Additional dispatch radio channels.
- Additional on-scene/fire ground channels.
- Updated 9-1-1 and dispatch consoles.
- Updated computers and programs.
- Updated computer-aided dispatch (CAD).
- Building security to include public access, weather, bombs, and terrorist factors.
- Adequate commercial power.
- Adequate automatic backup generator power supplies.
- Upgraded telephone system to automatic number identification (ANI).
- Alert protocol that addresses terrorist events specific to a CW incident.

Most jurisdictions should already have some form of 9-1-1 operators' checklist for notification of a HazMat incident. This should be an appropriate starting point for collecting information for a chemical incident. It is critical that information on the victims symptoms, type of release, safe response routes, and other pertinent information be provided to all responding personnel (e.g., police, fire, EMS).

Operators also normally have notification lists for various scenarios (e.g., bomb threats and homicide). A similar list should be developed for a chemical terrorist event. A starting point for the development of such a list would be from existing HazMat and terrorism notification lists. It is imperative that rapid notification of this type of incident be made to all agencies that may be affected to control and manage the incident and casualties. This list should be developed with input from various organizations that will play a role in the response to and management of a CW incident (e.g., hospital, fire, EMS, health department, state and federal law enforcement). This list should reference all local, state, and federal notifications. The development of this list may best be orchestrated through the emergency management office for each jurisdiction.

Issue: Multiple Agency Communications

Very few jurisdictions can expect to respond to and manage a chemical WMD incident alone. All jurisdictions must be prepared to receive state and federal agencies responding to the incident. Communications overload and the inability to link multiple agencies communications systems are key restrictions that must be overcome.

Recommendation. Communications between all responding agencies (e.g., fire, police, emergency management, health, medical, mutual aid) and levels (local, state, and federal) are key to a coordinated response effort. It is highly unlikely that jurisdictions will have communications systems or assets to provide interagency communications between even their local agencies.

From the outset of the incident response a Joint Operations Center should be established to manage the response. This will most likely begin as a fire and police command post and expand as other agencies arrive on scene. Liaisons to the JOC have the ability to communicate with their own response agencies and across agencies through the other liaisons at the JOC.

Emergency Response

Issue: Operations

Response operations begin with the initial dispatch for firefighters, rescue, HazMat, and EMS personnel to respond to a request for assistance at a chemical emergency. This information, in combination with preplans including building blueprints, maps, and utility plats, helps the emergency responder formulate issues pertinent to the call.

Safety becomes the number one concern. Personnel on the first arriving fire apparatus on approach to the scene should stop their vehicle at a distance and do an initial visual assessment of the area. The North American Emergency Response Guidebook should be used to determining initial hazard distances. This assessment will include any new information obtained from bystanders, victims, or witnesses to the event. The officer on the fire engine should confirm that all personnel on board are in full turnout gear, including SCBA, and proceed with caution into the immediate area of the incident.

The senior officer on the first arriving apparatus assumes the role of the IC. After doing a quick assessment, the IC must assign personnel to coordinate and manage both rescue and decontamination operations. Handheld hose lines manned by firefighters will be the first means of decontamination for victims and/or responders in the Hot Zone.

Water flow for decontamination must be established quickly and maintained without interruption. The initial water supply will be water from the booster tank of the apparatus.

Designated safety zones are determined and marked hot, warm, and cold. These zones not only mark the site for the fire department personnel, but also establish a crime scene perimeter for law enforcement during a CW incident. The zones will be secured by firefighters, and only authorized personnel will be allowed access into these zones.

Firefighters should plan and coordinate for a law enforcement presence inside of the Warm Zone in order to assist with crowd control.

Additionally, secondary devices threaten the safety of emergency responders. Emergency responders will need to coordinate with law enforcement to provide sweeps for secondary devices in and around the incident scene.

The implementation of personnel accountability and identification should be in place. Firefighters may need to perform rescue, HazMat, EMS, and decontamination operations in addition to fire suppression duties because of the critical nature of the event. In a CW incident, responder whereabouts can easily become confused, because many functions must be carried out simultaneously. Law enforcement officers and any other response personnel need to be included in the overall accountability of personnel operating in the hazard zones.

Rescue personnel, in addition to assisting firefighters, may be required to perform search, extrication, securing, rigging, and removal of all known live victims. Rescuers should wear a minimum level of chemical protection, firefighter turnout gear, and SCBA. In cases of a CW incident, rescue personnel should not make any rescue attempts unless there are **known, live victims**.

HazMat technicians on all CW incidents are expected to be responsible for overall HazMat operations, which will include detection, identification, containment, and decontamination within the Hot Zone. These technicians should wear full Level A encapsulated HazMat suits with SCBA for optimum protection against chemical contamination. Law enforcement personnel may ask HazMat technicians to provide detection support during the processing of suspected chemical devices.

Rapid identification, marking, and enforcement of hazard zones are essential to protection of lives.

HazMat teams should be prepared to provide monitoring assistance to law enforcement to reduce the size of the outer scene perimeter. This reduction will free up additional officers to assist with security inside the Warm Zone as well as perform investigative duties.

EMS duties at a CW event require wearing proper personal protection. At a typical HazMat scene, EMS responders are expected to operate only in the Cold Zone. Because of the large number of casualties from a CW event, EMS responders may be required to provide aid inside the Warm Zone. An appropriate level of chemical protective equipment must be worn.

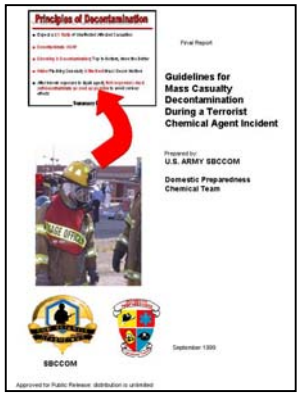
A CW incident requires a triage sector in the Warm Zone to prioritize patients for decontamination and treatment. Further discussion of patient decontamination guidelines can be found in the Health and Safety section of this part.

The massive amount of water needed to perform decontamination for a large number of victims raises questions of environmental concern. Water runoff can cause serious overflowing or flooding of storm drains, ponds, lakes, streams, and rivers. Contaminated water runoff should be controlled before it enters tributaries.

Recommendation. Responders from fire, rescue, HazMat, and EMS agencies must be prepared to respond to any type of emergency at any time. This response requires a constant state of readiness that is obtained through preplanning, regular response training, and specialized response training. The IC needs to use the resources that already are on hand: area maps, utility plats, charts, reference materials, training materials, technical manuals, supplies, equipment, manpower, and emergency vehicles. These resources, in addition to backup plans that address procuring supplies, equipment, emergency vehicles, and manpower, are necessary because a CW incident may absorb multiple resources for many days.

Because of the magnitude of a CW incident, the massive number of victims, and the limited HazMat resources, the functional group recommends that Incident Commanders be familiar with the IRP report, *Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist Chemical Agent Incident,* that outlines the risks associated with using standard turnout gear and self-contained breathing apparatus for quick rescue operations. This report gives guidelines and report findings on the use of turnout gear and SCBA for a quick rescue of **known live victims,** at the scene of a CW incident. This report is available for downloading at the SBCCOM Homeland Defense Web site (http://hld.sbccom.army.mil/).

To help mitigate the effects of a chemical agent during the initial fire department response, the functional group recommends that jurisdictions review another technical report: *Guidelines for the use of Positive Pressure Ventilation (PPV) Fans to Reduce Agent Contamination in a Building,* which is available at the above Web site.



The Mass Casualty Decontamination Report is one of several studies documented by the CWIRP to assist responders in preparing for domestic chemical terrorism.

A third report, titled *Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident*, gives detailed information on various methods and procedures for chemical agent decontamination. This document addresses coordinating the decontamination of ambulatory and non-ambulatory patients. Decontamination issues that need to be further developed; however, include cold weather decontamination, rapid patient identification prior to decontamination, and the length of time each person must be decontaminated to ensure they are free of the contaminant. This report is also available at the above Web site.

Responders are also faced with the challenge of identifying, accounting for, and securing the personal possessions removed from victims during decontamination. The decontamination process will be under control of the fire department, but it is expected that law enforcement will assist with the accountability and security of personal property.

Issue: Command and Control

Command and control starts with the first arriving officer and remains until he or she is relieved by another officer. The dispatch center performs a major role for the IC by

providing the communications link between different responding agencies. In cases of a CW incident, the magnitude of the event will dictate an Incident Command System (ICS)/Incident Command Management (ICM) response. The fire department will most likely have initial control of the scene throughout the rescue of victims. Agencies responding to the incident should provide a liaison to the IC to coordinate joint response activities and share information. As soon as possible all responding agencies to the incident should form a unified command in order to control and organize the multiple aspects of the on-scene response. Once rescue operations are complete, control of the incident will be handed off to the senior investigating agency on the scene.

The IC will need to immediately assume command and begin assigning sector command responsibilities to prevent a CW incident from becoming out of control. **What is established in the first hour of the incident will affect the first 24 hours of operation as well as the long-term response and recovery.** The magnitude of a CW event will pose extreme challenges to the rapid command and control of the incident.

Recommendation. The key component to any successful operation is strong leadership. Fire service leaders are charged with the responsibility for the preservation of life and property in the community. These leaders must be multitalented not only in leadership qualities, but they also must have a vast knowledge of all aspects of fire, rescue, HazMat, and EMS operations. These individuals must learn, train, and retrain on all aspects of the job to maintain their proficiency.

Company officers need to practice establishing ICS/ICM on smaller incidents to assist in the overall command and control that is necessary in a large-scale event. Also, a jurisdiction should have a working knowledge of the area's capacity to handle an operation involving a CW incident. After evaluating an incident, the IC should be able to identify the resources he or she needs and know if they are available. Early requests for backup resources will aid the overall command and control of a CW incident.

Issue: Scene Safety

Safety is the number one priority for all emergency responses. A safety officer should be appointed who is responsible to oversee and control all responders as they perform their duties. A CW incident, however, is laden with an inordinate number of concerns and may be spread over a large area, which a single safety officer would not be able to effectively mitigate. All responders must realize that no job is so urgent or important that they cannot take time to perform their duties safely.

A CW incident's size and magnitude require a specific level of PPE. All responders on the scene, including EMS, will be required to wear a certain level of PPE regardless of their location on the scene. Chemical agent incidents require turnout gear, SCBA, HazMat gear, and chemical suits.

In an act of terrorism, responders must also be cognizant of the threat that perpetrators may still be on the scene and/or that secondary devices may be in the area. Staging areas, casualty collection points, decontamination areas, and such are potential targets for secondary attacks.

Recommendation. Fire department SOPs should include a safety officer as part of the command structure. Scene safety should be established as soon as possible and safety guidelines adhered to at all times by all personnel. A CW incident may require a safety officer for each sector or multiple sectors within the operation.

It is recommended that the safety officer have a working knowledge of all aspects of emergency services. The individual must be familiar with departmental, local, state, and federal safety regulations, procedures, policies, and protocols. Additionally, the safety officer should be familiar with the technical reports and issues referenced in this Playbook.

Issue: EMS Activate Mass-Casualty Incident (MCI) Triage Protocols

A CW incident demands the use of MCI triage. Casualty management will start with a quick triage, assessment, and prioritization of all casualties of the chemical event. The CWIRP recommends the START triage system as it works well in a CW incident that requires prioritization of a large number of victims. Patient status is color coded based on their priority for treatment: Red for Immediate, Yellow for Delayed, Green for Minor, and Black for deceased or Expectant. START is not, however, a national standard and many jurisdictions do not adhere to it.

One major constraint to any MCI is that there will be many ambulatory and nonambulatory patients who will all need to be decontaminated. This situation adds to the complexity of triage. Ultimately, the process of moving patients out of the Warm Zone is considerably slowed.

Baltimore City EMT dons turnout gear over a Tyvek suit prior to assisting with casualties on a CWIRP chemical response drill.

EMS providers assisting in decontamination operations should wear and use all required protection equipment. Safety precautions must be followed to guard against any direct contact with victims or the chemical agent.

Once mass tagging of victims has taken place, the tagging of personal belongings and decontamination of victims can occur simultaneously before the patient receives further treatment. The number one treatment modality for CW victims is decontamination. Additional treatment may also include administering antidotes.

The large number of victims complicates patient tracking. Victims will initially be tracked by EMS according to their priority and destination status. However, many patients will flee the scene without EMS having the opportunity to evaluate and/or transport these patients to awaiting hospitals. EMS status reports should be considered only the first echelon of patient tracking.

After treatment and stabilization, casualties will be transported to available healthcare facilities, off-site treatment facilities, and hospitals. Several modes of casualty transport may need to be used to accommodate the large number of CW casualties.

Recommendation. All EMS providers should be aware of and train on all aspects of hazardous chemical contamination and methods of decontamination, including those

chemical agents used as WMD. A suggested learning resource is the Train-the-Trainer program offered through the DPP.

The Improved Response Program (IRP) has developed guidelines for mass-casualty decontamination. These are included in the *Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident*. This report explains methods of full chemical agent decontamination and explains the methods of casualty prioritization as well. The use of the START triage system and knowledge of all medical protocols should be practiced by all EMS providers.

Many agencies do not issue protective clothing and SCBA to EMS providers. It is suggested that all EMS personnel be issued, be trained, and use, as a minimum level of protection, firefighting turnout gear and SCBA or other respiratory protection.

Patient tracking recommendations can also be found in the Health and Safety section of this part of the Playbook.

Mass-casualty transport may require enlisting public and private ambulances, public buses, taxis, and police vehicles. These procedures should be part of a jurisdiction's planning considerations and be outlined in standing operating procedures, memorandums of agreements and emergency response plans.

Issue: Decontamination Support to Hospitals and Off-Site Treatment Centers

In the event of a CW incident, hospitals will most likely request the fire department to respond and provide decontamination operations at their facilities. In a large-scale chemical incident it is expected that all available fire assets will be consumed in the on-scene response. Therefore hospitals should not rely on their availability to assist with decontamination.

Each hospital receiving casualties from a chemical incident needs the capability to establish a water decontamination area at a designated entrance to each facility.

This operation would be responsible for all walk-in casualties as well as any decontamination of medical equipment, ambulances, or vehicles transporting casualties to each facility. Verification of completeness of decontamination must be made before equipment is returned to service.

Recommendation. Hospitals should not expect the fire department to be available to assist them in decontamination. Hospitals should have their own contingency plan that includes use of their own buildings and grounds or maintenance departments. It is important to note that garden type hoses do not provide sufficient water volume or pressure to provide adequate skin decontamination. Hospitals would have to go to a fire hydrant to obtain adequate water flow and pressure.

Law Enforcement

Issue: Incident Command

It is imperative that once a CW incident is identified, the first officer on scene acts as the law enforcement IC until relieved by a senior official. Controlled response to a CW incident is essential for officer safety. Allowing officers to respond to a scene as individuals until a supervisory officer arrives will most likely result in the majority of first responding officers becoming casualties. Responders will rely heavily on the dispatch center to collect and relay pertinent information regarding the situation as it unfolds at the incident site.

Since the response to a CW incident is going to involve multiple agencies, a joint command center is necessary to coordinate the response. Throughout the rescue of victims, the senior fire official on scene is most likely to perform the duties of the IC. As the incident progresses from emergency response to criminal investigation, so will the transition take place from the fire department to law enforcement command and control of the scene. Any CW incident will most likely be declared an act of terrorism, and the FBI will lead the overall investigation.

Recommendation. It is essential that the first arriving officer takes control of the situation from a law enforcement perspective and not become too involved in the response. A rapid assessment of the situation and identification of hazards must be made and relayed to follow-on units to save lives and prevent casualties. Regardless of the rank of the first responding officer, he or she must assume the role of law enforcement IC and that of liaison with the fire department IC. All on-scene law enforcement activity should be coordinated through this law enforcement IC/liaison officer since this person is responsible for reporting the police activity to the overall IC. This procedure is essential for the safety and accountability of all responders to the incident.

Close operations with the fire department IC will ease the transition from a fire to a law enforcement command structure at a point to be determined by commanders. State or federal law enforcement agencies may be on the scene by the time this transition occurs. Local law enforcement agencies are expected to provide a liaison and to support the senior level of law enforcement conducting the investigation.

Since police are expected to provide a liaison to the fire department during the rescue operation, a fire department liaison should be made available to the law enforcement IC during the investigative operation. Law enforcement will require fire department support to provide decontamination and agent monitoring unless a self-sustaining team such as the FBI HMRU is performing the on-scene investigation.

Issue: Perimeter Security

Perimeter security for a chemical incident will differ from a standard crime scene in several ways. The airborne vapor contamination will require that the initial perimeter be much larger than the actual crime scene and, therefore, require a larger number of officers to control. While the outer perimeter will be established in the Cold Zone, officers will still be

threatened by cross-contamination from victims, shifting winds and/or additional chemical releases.

Level C PPE is recommended for officers on the incident scene perimeter to mitigate the threat of cross-contamination.

The fact that victims are alive inside the perimeter without protective equipment will provide a false sense of safety to those outside the area. The threat of cross-contamination from victims' clothing will not be visible. High-ranking officials visiting the scene as well as relatives and news crews may attempt to enter the outer perimeter. In addition to keeping unprotected persons out of the secured area, it is necessary to keep those who are still contaminated from leaving.

Recommendation. Some form of initial control over the flow of personnel into and out of the incident scene is critical. It is expected that by the time a sufficient number of responders are on scene to provide an effective means of control, those who are intent on leaving the scene will have done so already. The remaining victims will probably be more cooperative in remaining on site, or are unable to leave and unless they become restless, the majority of effort will be placed on keeping people out of the area. The external perimeter, traffic control points, etc. should be reduced in size as quickly as possible based on chemical monitoring of the area and advice of the HazMat team to reduce the impact on the police department's manpower.

Level C PPE is recommended for officers manning the perimeter. This level affords the key protection necessary based on the contamination threat; however, wearing a respirator severely limits the ability to communicate with the general public.

Level C PPE consists of a chemical protective overgarment, negative-pressure respirator and chemical protective gloves and boots.

The Law Enforcement Functional Group investigated the legality of detaining someone intent on leaving the site that had not yet processed through decontamination. Not all agents produce immediate casualties or fatalities. Initial concerns were that an individual could unknowingly pose a possible threat to the community through cross-contamination. Basic information concerning the civil rights of these individuals leads to the following conclusions:

- The individual could be forcibly detained if there was reasonable cause to suspect that he or she were involved in carrying out the attack.
- The threat of contaminating an area or person(s) outside the perimeter does not justify the use of force.
- In some jurisdictions, declaration of the incident as a public health emergency may provide additional authority to law enforcement. This needs to be verified between law enforcement and health officials as part of their planning and preparation for response to a chemical incident.
- All attempts within legal limits should be used to convince individuals to undergo decontamination prior to departure from the incident scene.

Issue: Crowd Control within the Incident Scene

In all likelihood, an incident of chemical WMD terrorism will be directed at a large gathering of people to cause enormous casualties and fatalities. Mass confusion and hysteria will follow such an attack. Law enforcement will play a major role in assisting and controlling the affected population inside the hazard area. A calm and orderly response from uniformed responders (police and fire) is essential in controlling the massive numbers of people who may be involved in such an event.

Law enforcement presence in the Warm Zone is necessary to handle the situations concerning crowd control that are beyond the scope of the fire department. It is expected that some individuals will become confrontational with the firefighters who are separating, segregating, and prioritizing victims for decontamination. As victims process through decontamination, they may be found in possession of contraband or weapons (possibly not related to the WMD incident) and other sorts of paraphernalia. Suspects may also be identified among those awaiting decontamination.

Recommendation. This is an area where preparation, training, and equipment are essential for providing a controlled response. The instances outlined above are only some reasons police involvement inside the Warm Zone is necessary. After these situations arise, it is too late to begin thinking about a police response. Departments need to plan and equip officers for operations inside the Warm Zone and decontamination corridors of a chemical incident.

In a joint meeting of the fire and police representatives of the CWIRP, both groups discussed their objectives as they pertain to the need for mutual support. A major concern for the fire department was a police presence inside the Warm Zone to provide additional crowd control and safety for the first responders. The major concern of law enforcement was to secure the external perimeter prior to initiating crowd control for the fire department and first responders. Even though both sides agreed on the role of law enforcement, it is expected that the response would not be automatic. The groups agreed on the following two basic considerations:

- The fire department needs to request support thru the senior police liaison on the scene.
- The police department saw this role as essential to the overall control of the incident and agreed that it should be supported as soon as they established police command/control and perimeter security.

Issue: Witness Tracking, Interviewing, and Debriefing

Police interviews of potential witnesses to a chemical incident will be time consuming and manpower intensive. Initial interviews to determine specifics of the incident and initial descriptions of suspects need to focus on victims closest to the point of agent dissemination. In the case of a major event (e.g., sporting event or concert) with thousands of people in attendance, the only things distinguishing these individuals from the rest of the crowd are their symptoms and injuries. The most severely injured and/or contaminated

may have the most useful information; however, their treatment and transportation to medical facilities cannot be delayed.

Most mass-casualty situations are derived from natural disasters or unexpected accidents. In the case of a chemical WMD incident, the fact that a deliberate criminal act caused the incident makes the law enforcement role much more significant. Accountability of everyone involved in the incident is essential to police investigations.

Detectives interrogate an actor portraying a potential suspect during one of the CWIRP functional exercises.

Recommendation. Patient identification and tracking begin at the incident scene and should be part of any jurisdiction's current mass-casualty response plan. The overwhelming numbers of victims and limited medical treatment facilities will result in patients being transported to many different locations. Police must coordinate closely with fire and EMS to identify the disposition of victims for them to be interviewed by investigators.

Investigators should coordinate with the medical community to identify any people who entered the healthcare system on their own reporting symptoms that indicate they may have been part of the chemical incident.

Law enforcement should establish an area to conduct interviews that is close to the incident scene for rapid processing and dissemination of information to the incident command post. This area must take into consideration that victims will have undergone decontamination and need a place to stay warm and possibly seek further, non-urgent, medical care.

The CWIRP recommends that the local health department provide a specific station to conduct victim interviews at its off-site treatment facility. This facility can be an extremely useful collection point of witnesses since all noncritical patients from the scene will be transported there as well as victims seeking critical incident stress management (CISM). Conducting interviews at the off-site facility and obtaining available building space should be coordinated with the agency responsible for its operation (normally the health department).

Issue: Airspace Management

One major concern during a CW incident is to contain the spread of the chemical agent, particularly when aircraft downdraft can proliferate further contamination. It can be expected that citizens will be concerned about news helicopters recording them processing through decontamination, where disrobing is recommended as part of the process.

Controlling airspace over an incident is difficult because law enforcement routinely use helicopter support to control the scene. Moreover, many media organizations will try to use helicopters to obtain better visual coverage. Containing the spread of the contamination warrants strict management of airspace over a CW scene.

Recommendation. Immediate declaration of airspace restrictions should be made as soon as a chemical incident is suspected and it should be maintained until all airborne

contamination is mitigated. Police aviation assets should also assist in enforcing airspace restrictions around the incident site.

Health and Safety

Issue: Triage/Decontamination Prioritization

Triage priorities differ during a CW incident. The emphasis is placed on decontaminating victims prior to treatment to avoid spreading the contaminant. It is also important to decontaminate the patient as a means of treatment to prevent prolonged chemical exposure. Only in certain instances, such as intubation, does treatment take precedence over decontamination.

Recommendation. The program recommends using the START triage system for mass casualty triage. This system is incorporated into the guidelines for mass-casualty decontamination that are cited in SBCCOM September 9, 1999, *Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident*. This document provides guidelines for prioritizing casualties for decontamination and treatment. The report is available via the SBCCOM Web site (hld.sbccom.army.mil).

Issue: Casualty Tracking

Identification of personnel from a terrorist incident scene is critical to the law enforcement investigation as well as the care of patients. Tracking patients from any mass casualty incident is a enormous and time consuming task. Without hindering the patient care responders should make every attempt to assist in the identification and tracking of patients.

Recommendation. Patient tracking should include the use of a waterproof triage tag that has multiple peeloff bar code/serial number stickers. These stickers allow EMS personnel to quickly process patients through the triage, treatment, and transport sectors because they can place the bar code sticker on their rosters without having to rewrite patient name, status, and destination. The stickers also help identify patient belongings that could be returned later. EMS status reports should be considered the first echelon of patient tracking.

Issue: Mass-Casualty Transport

During a CW incident, transport of multiple patients to various healthcare facilities can be a complicated process. Also, there will likely be a larger victim population than in most other kinds of EMS responses. It is important to control these patients and get them to definitive care in a timely manner; otherwise, they may flee the scene attempting to obtain medical care on their own.

The use of mass transit vehicles and other means of public transport is often an acceptable means to provide mass-casualty transport. This method requires careful consideration since a CW incident creates multiple concerns:

- Who will drive the bus and what kind of PPE does the driver need to wear?
- Is the vehicle decontaminated prior to being put back in service?
- Who determines that the unit is adequately decontaminated?
- How many healthcare personnel are needed on the bus during patient transport?
- Will citizens ride in a bus that was used to transport decontaminated victims?

Recommendation. An MOU should be established between the community and its mass transit assets or a school bus company so that buses can be used for the purpose of mass-casualty transport. Decontaminated walking wounded and patients who are triaged minor (green) should be transported to the Off-Site Triage, Treatment, and Transportation Center for further treatment and evaluation. Patients triaged as urgent or immediate (red or yellow) should be transported by ambulance directly to a medical treatment facility. It is recommended that each ambulance carry more than one patient, if possible.

An EMT or EMT-P should accompany patients on the bus, oversee patient status, and render necessary care. It has not been determined how many EMS personnel are needed to staff this type of patient transport, because it is dependent on the situation and expected chemical agent.

Mass transit vehicles are expected to play a key role in the transportation of noncritical, decontaminated casualties.

There is no recommendation regarding who should operate the bus. In the case of the agencies supporting the CWIRP, it was agreed that normal bus drivers would not operate the vehicles. It is recommended that operators wear Level-C PPE.

The route to the facilities (e.g., hospitals, off-site treatment center, mental health support site) should be planned and cleared by police to promote easy egress and ingress and rapid return of transport vehicles.

The bus will need to be put out of service until it has been decontaminated and verified safe for public use. Determination of the effectiveness of decontamination should be coordinated between the local jurisdiction and the Environmental Protection Agency (EPA).

Issue: Hospital Security

To protect their facility and personnel from becoming contaminated, hospitals need to establish plans for controlling access during a chemical terrorist event. Hospital security should be prepared to handle a large influx of patients who may become unruly as hospitals establish one entry point to the facility. Victims may begin to panic knowing that they were a part of a terrorist event and need to be decontaminated and believing that the limited admission process inhibits their access to definitive care. Security personnel become the first line of defense to controlling crowd behavior.

Further complicating the hospital security issue is the fact that many hospitals employ off-duty police offers to supplement their staff. During a CW incident these officers may be recalled to their full-time departments to provide backup support to the overall operation. Hospitals may then be understaffed to adequately provide crowd control.

Recommendation. Security personnel should wear Level-C PPE for protection from casualties who may have contamination on their clothing. This is the same level of protection recommended for the police officer performing perimeter security. Security personnel should also go through a decontamination line at the end of their shift, to minimize any potential exposure.

Controlled entrance to hospitals is essential to ensure facilities are not contaminated.

Hospitals should have an accurate inventory of personnel who are capable of providing support during a CW event. These plans should also include an attrition of personnel because some officers may inadvertently become contaminated and unable to render support. Hospital security departments should seek to supplement their staff through other means.

Issue: Hospital Triage/Decontamination – Outside

During the first hour of a chemical terrorist attack, hospitals may experience a large number of patients—walking wounded, worried well, citizens who live near the scene believing they need to be treated, and private vehicle arrivals seeking treatment. Hospitals could become inundated with patients as victims from the scene are added to their normal patient load. Suddenly, hospitals will be responsible for differentiating between these two patient populations and deciding who needs to be decontaminated and how they should be triaged, treated, and, if needed, transported to another facility.

Hospitals generally do not have much experience rapidly triaging a mass number of patients. In addition, most are not prepared to perform mass decontamination operations. Also, Emergency Departments do not have the room needed to set up a triage area that aids the overall ability to treat numerous victims.

Recommendation. Hospitals should coordinate with the emergency response and emergency management agencies to ensure that they are included in the notification sequence once a chemical agent incident is suspected. This early notification will assist administrators in preparing for the potential of contaminated casualties self-referring to their facilities.

One entry point into and out of the hospital should be determined during a chemical terrorist incident. This controlled access helps to avoid secondary hospital contamination that could potentially shut down the facility.

An outside staging area should be established near the entry point so that patients can be segregated as those decontaminated at the scene, those not previously decontaminated, and those not part of the CW incident. Workers manning stations outside of the hospital should wear Level C PPE as the minimum recommended level of protection from cross-contamination.

The goal of the staging area should be to establish control of the victims and restrict them from entering until they have been properly decontaminated and triaged. It may also become necessary to instruct victims who show up by personal vehicle to go to an off-site treatment center and to decontaminate anything they have touched since the incident. Hospitals nearest to the incident may need to arrange patient transportation to an off-site treatment center or to an outlying facility when their resources are overwhelmed.

Guidelines for establishing an outside triage area can be found in the chapter marked Non-Ambulance Transport of Casualties in the book *Disaster Response: Principles of Preparation and Coordination* by Erik Auf der Heide and *The Public Information Chapter as Specified in the Trauma Care System—Guide to Planning, Implementation, Operation and Evaluation* by Cales & Heilg, Jr., 1986.

Hospitals should not expect the fire department to be available to assist them in decontamination. Hospitals should have their own contingency plan that includes use of their own buildings and grounds or maintenance departments. It is important to note that garden type hoses do not provide sufficient water volume or pressure to provide adequate skin decontamination. Hospitals would have to go to a fire hydrant to obtain adequate water flow and pressure.

Issue: Logistics for Sustained Operation

The ability to sustain operations and recover from a disaster is dependent on the system enacted during the first hour and the long-range plans made to handle potential complications. Along with rendering care to CW victims, hospitals need to continue to provide care to the regular influx of patients. Disaster plans do not adequately address rendering care to both patient groups for a sustained period of time. Patients exposed to chemical contaminants may need to be admitted to intensive care units (ICUs) requiring cardiac monitoring, regular administration of medication, and ventilation support, as well as medical staff to provide this care.

Recommendation. Hospital administrators should coordinate their planning and response efforts with the National Disaster Medical System (NDMS) assets such as the Disaster Medical Assistance Team (DMAT) and the American Red Cross who are capable of providing medical support and medical staff.

Before external help arrives, hospitals may need to temporarily change the nurse or technician to patient ratio to provide care to a larger number of patients. Hospitals should also build into their disaster plan a means of acquiring more emergency department and front lobby personnel because these people may become contaminated should victims rush hospitals for treatment.

Issue: Use of Terrorism Annex in Disaster Plans

Hospitals accredited by JCAHO are required to have the hospital's disaster plan available in each department. Since this document is so rarely used, most staff members are unfamiliar with it. Unfortunately, department managers who are the most familiar with this plan do not work 24 hours a day, 7 days a week (24/7). Clinical "charge" positions are

generally created in 24/7 operations, but these persons are often not well informed of the hospital disaster plan.

Recommendation. Hospitals should have a terrorism annex that also addresses weapons of mass destruction as part of their disaster plans. The written plan should be in a convenient location that is also easily accessible. Quick charts of antidotes for CW patients could be placed on walls by telephones. Annexes describing different scenarios should be well labeled and easy to read (e.g., chemical weapons, biological weapons, mass decontamination). Also, the annexes should describe specific actions that the department should take, since each type of response requires events to be prioritized differently.

Emergency Management

Issue: Event Awareness

The emergency management community is not likely to be aware of an incident in its early stages. First responders will be on their own to assess the situation, provide assistance to victims, and gain and maintain site control. The organization, infrastructure, staffing, and lines of communication among the emergency management and first responders vary across the country. Based on discussions conducted throughout the course of the BALTEX series of exercises and conferences, members of the emergency management community believe that they will first be apprised of the situation based on the following:

- Media, via radio or television.
- Monitoring of first responder radio transmissions.
- Large number of casualties associated with incident.
- Extensive property damage.

In many cases throughout the country notification comes as a result of media involvement (e.g., CNN and local news station). Unfortunately, as far as public safety and information is concerned, emergency managers may be immediately put into a damage control posture. Many agencies monitor police and or fire department radio communication because this offers the best venue for accurate information. The rapid collection and dissemination of accurate information is essential to maintaining public confidence.

Recommendation. Emergency managers should be part of the rapid notification system/list supporting the communities response to a suspected chemical agent incident. Emergency managers should review their operations plans with their supporting first responders and in conjunction with state and federal emergency managers.

Part IV – Follow-On Response: The First Day

Once the immediate response and lifesaving procedures are in place, a jurisdiction needs to focus on the coordinated response to manage the incident. A chemical WMD incident will result in an overwhelming amount of local, state, and federal resources responding to the scene. Management of these resources and their integration into the planned response will be a major challenge to a city. Within 24 hours local mutual aid, state resources, and local federal support (branch offices) will arrive on the scene.

This section outlines key issues and recommendations facing a jurisdiction after the initial lifesaving response measures have been conducted.

> *…the Panel believes that the historically more frequent, lesser consequence terrorist attack, is more likely in the near term – one involving a weapon on a relatively small-scale incident, using either a chemical, biological, or radiological device (and not a nuclear weapon), or conventional explosives. Rather than having the intention of inflicting mass casualties, such an attack could be designed to cause a limited number of casualties, but at the same time cause mass panic. … Nevertheless, even limited casualties could precipitate a disproportionate psychological response among the public. The resulting panic by citizens who perceive that they have been exposed, but who (like many in Tokyo) in reality have not been exposed, could effectively paralyze response capabilities even among the most prepared.*
>
> *First Annual Report to The President and The Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction. RAND 1999, Washington D.C.*

General

Issue: Stress Management of Emergency Personnel

It is expected that a CW terrorist incident will create an extremely stressful situation for emergency responders. The effects of stress on the individual may be immediate or delayed and will vary from person to person. It will have a direct impact on the emergency responders' ability to properly perform their duties.

Commanders should look for personnel displaying the following stress-related warning signs:

- Headaches
- Blurred vision
- Vomiting
- Isolating themselves from other responders
- No response or slow response to commands
- Acting confused, argumentative, or disillusioned

Responders face dangers and save lives everyday; however, the psychological strains associated with a deliberate MCI must be understood and addressed.

** It is noted that several of the above warning signs are also symptoms of nerve agent poisoning. It may be difficult to tell if the symptoms are related to stress or prolonged agent symptoms.*

Experience from the Oklahoma City bombing indicated that stress debriefings had to be mandated to ensure that they were accomplished. Many responders did not willingly want to participate and actively sought ways out of the debriefings.

Recommendation. One important factor to the responders involved in the Columbine incident was the ability to notify family members of their status. Telephone communications to inform family members that they were not a casualty of the incident was extremely important. This means of stress management should be considered for any major response effort.

It is also recommended that critical incident defusing take place before personnel are released from their duties and sent home.

Twenty-four hours after the incident, an official mandatory debriefing should be implemented.

Jurisdictions should update their employee assistance programs on the impact of the event and their companies' role at the scene. Commanders should continue to look for signs of stress well after the event.

Another important element in handling stress management is each individual's right to privacy. Some responders do not wish to disclose their condition. Caution must be used not to violate this issue, as the person may or may not accept stress treatment if his or her right to privacy is violated.

Emergency Response

Issue: Safety and Security

Emergency responders and law enforcement officials will need to work together in a CW terrorist event to ensure the safety and security of the entire scene. Police agencies may or may not be equipped with the adequate level of PPE. This could require emergency responders to perform the additional tasks of limiting access to the Hot, Warm, and Cold Zones.

Additionally, secondary devices threaten the safety of emergency responders. Emergency responders will need to coordinate with law enforcement to provide sweeps for secondary devices in and around the incident scene.

Monitoring for agent contamination is essential in determining safe operating zones, levels of protective equipment and identification of agent if possible. Law enforcement agencies are not expected to have chemical agent detectors and will require assistance from the fire department's HazMat team.

Recommendation. Communication and shared information between emergency responders and law enforcement is a must to maintain safety and security on the scene.

Emergency responders need to advise law enforcement on the proper levels of protective equipment needed for officers' safety. The minimum level recommended for officers operating on the perimeter and in the Warm Zone is Level C.

Issue: Environmental Concerns

Decontamination of a large number of people will lead to water runoff that will be difficult to mitigate. Emergency responders are responsible for avoiding spreading the contaminant. Water runoff is likely, but should be contained to the best extent possible.

Contained water runoff will need to be tested and monitored to determine the appropriate disposition. This must be closely coordinated with EPA and local environmental regulations.

Uncontained runoff may have long-term environmental effects both because of the level of contamination and the release of massive quantities of water into the environment.

Recommendation. There currently are no acceptable levels for military chemical agents in the civilian environment; however, it is recognized that the task of containing all the water from a chemical MCI is impossible. Because of this, guidance was sought from EPA concerning the liabilities of a community in performing mass-casualty decontamination operations in response to a chemical terrorist event.

Trace chemicals in runoff and other environmental affects of mass-casualty decontamination are concerns; however, saving lives takes precedence.

EPA responded in a letter stating that contaminated water runoff is not considered an act of negligence when emergency responders undertake necessary action to save lives and protect the public and themselves. This EPA response is included in Part VIII of this Playbook.

EPA's standing on contaminated water runoff, however, does not eliminate the responsibility to control the flow of water into the local environment. Steps must still be taken to prevent erosion and other environmental impacts resulting from the release of massive quantities of water.

Contained water must be monitored and approved for release into the environment or properly classified for disposition in a hazardous waste site.

Issue: Procedures for Prolonged SCBA Operations

Emergency responders working within the contaminated areas of a chemical agent event will be required to operate for prolonged periods using SCBA. The recommendations of the CWIRP as outlined in the *Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist*

Chemical Agent Incident indicate that firefighters in standard bunker gear and SCBA can operate in a contaminated environment to perform a quick rescue of known live victims. However, the normal practice of donning SCBA before entering a building and removing it immediately upon exit is inappropriate for a chemical incident. SCBA must be donned prior to entering the Warm Zone and is the last item removed as the firefighter processes through decontamination. The time needed to process through decontamination makes it essential that firefighters exit the contaminated area immediately when their warning bell activates.

In addition, the use of turnout gear and SCBA should only be considered for quick rescue operations. Other activity that does not include victim rescue should be performed in OSHA approved PPE for hazmat operations.

Recommendation. Technical decontamination must be established for processing responders operating in the Warm and Hot Zones. Firefighters should be trained on the technical decontamination procedures normally reserved for HazMat operations. Additional air supplies should be at the decontamination area so that firefighters who exhaust their tanks can do a quick switch before proceeding through decontamination.

SCBA used inside the Warm or Hot Zones must be decontaminated to EPA standards or left in the Warm Zone for safe disposal..

Issue: Decontamination Support to Recovery Operations

Technical decontamination is normally established for HazMat operations only. A CW incident requires multiple agencies that do not have their own decontamination capabilities to operate in the Hot and Warm Zones. Emergency response needs to maintain technical decontamination throughout the incident to assist other agencies during their recovery operations.

Each phase of recovery must be supported by decontamination teams.

Specific support to law enforcement can be expected to include decontamination of evidence containers and sensitive equipment to include firearms. The decontamination of sensitive equipment will be under the supervision of law enforcement, which will also provide security over the same.

Gross level decontamination of the deceased will need to be conducted on scene before the medical examiner can take possession of the bodies. This must also be closely coordinated with the investigating law enforcement agency to preserve any evidence they will need.

It is also expected that the fire department will be asked to assist with the gross level decontamination of major equipment, including vehicles, that may have been in the Warm or Hot Zones and/or have transported contaminated casualties.

Recommendation. Emergency responders need to work closely with all agencies involved in the recovery operation to ensure that all decontamination requests and procedures are provided.

** The following is a special note pertaining to decontamination efforts during non-emergency response phases.*

EPA states that government jurisdictions can be found negligent when contaminated water runoff results from decontamination efforts performed during nonemergency response phases. Water from these types of decontamination operations must be collected, containerized and disposed of in accordance with regulations governing hazardous waste management.

Issue: Manpower Replacement

Managing a CW incident is labor intensive. Additional manpower is required to perform decontamination operations, and specialized personnel, such as HazMat technicians, are needed to perform critical tasks. Issues that complicate the availability of manpower include loss of personnel because of contamination or exposure, injury, fatigue, and stress.

Recommendation. The IC needs to monitor the status of all personnel on scene and ensure that they are capable of performing their duties. Medical screening should be conducted on individuals at the completion of their mission. Coordination for additional manpower to include special skills may be necessary to provide continual operations.

Issue: Replacement of Supplies, Equipment, and Apparatus

Most jurisdictions and departments have a limited amount of resources to perform normal daily operations. In a CW incident, it is expected that resources will quickly be depleted and/or may become contaminated.

Items that are normally consumed on a daily basis will be easier to replace in a timely manner. Other items, such as turnout gear, SCBA, and apparatus, are not readily available. The loss of these items not only hinders the ability to continue operations at the chemical incident scene, but also affects the jurisdiction's ability to perform daily operations.

The reality exists that major response items may be lost temporarily or permanently because of contamination.

Recommendation. A contingency plan for replacing equipment used during a CW incident should be in place. It should include a list of stockpile locations, mutual-aid equipment, equipment vendors, and equipment manufacturers. This list should be readily available at all times both on the scene and in the station for immediate access by those personnel responsible for equipment acquisition. This plan should include temporary and permanent replacement options.

Issue: Field Communications

Communications systems are effective when operated up to a predetermined peak load. They are not reliable during periods of saturation. Responders must realize communications and equipment being used both on and off site during a CW event are vulnerable to interruptions, breakdowns, total failure, damage, loss, and contamination. Alternate means of communication must be in place. Additionally, perpetrators of a CW event may also purposely disrupt communications systems to further hinder the response effort.

Recommendation. All emergency agencies should have contingency plans in place for dealing with communications loss. These plans should include automatic, systemwide backups that are enforced upon communications failures. The final alternative should be a complete manual system such as runners. These procedures should be practiced on a regular basis during routine emergency response exercises. Alternate means of communication can include the following:

- Spare or replacement radios and radio supplies
- Mutual-aid radio and communications equipment
- Private radio equipment
- Hard-wired telephones
- Wireless telephones
- Wireless data links
- Fax machines
- HAM radio
- Message runners

Communications systems that are dependent on batteries require frequent replacement or recharging of batteries for continual operations. Experience in the Columbine High School attack showed that 4 hours of constant use was the average limit for batteries due to the high volume of use.

Law Enforcement

Issue: Evidence Collection and Decontamination

Once the threat of airborne chemical contamination has been eliminated, law enforcement is still faced with processing a crime scene where a large part of the physical evidence may be contaminated. This is particularly true with the more persistent chemical agents such as VX and mustard. Local crime lab members are not normally trained or equipped to perform this task. In addition to the physical hazards of collecting contaminated evidence, law enforcement must consider that decontaminating evidence may subsequently destroy (contaminate) critical components of the investigation. This concern precludes decontaminating evidence on the scene to facilitate collection and processing.

Recommendation. Since an attack with chemical agents will most likely be declared an act of terrorism, the FBI will lead the criminal investigation. The FBI's Emergency Response Team (ERT) is best suited to collect the evidence from such a scene. Local law

enforcement should limit their involvement to the security and preservation of the scene until federal assets arrive.

Evidence samples of the chemical agent do not need to be hurriedly collected because potential evaporation or degradation is not a concern. A significant amount of military scientific information substantiates that chemical agent evidence can be drawn from trace elements of the agent by-products.

Chemically contaminated evidence should be packaged on scene and the detailed decontamination conducted at the laboratory. Law enforcement should decontaminate the outer package on the scene prior to transferring the evidence to a lab.

Issue: Decontamination of Law Enforcement Officers

Performing operations in a contaminated area requires personnel to undergo decontamination operations prior to being released from the incident scene. Normally decontamination is only performed by HazMat teams. This process is relatively new to most first responders especially law enforcement. In addition, equipment that enters a contaminated area to include that that is worn by an officer must be decontaminated before it is released from the scene. The following issue outlines equipment decontamination concerns.

Decontamination is the process whereby the threat of contamination is reduced through deliberate and controlled protective clothing removal and/or agent removal from such clothing. The type of decontamination process is normally determined based on the type of protective clothing worn. It is imperative that law enforcement officers operating in contaminated areas understand decontamination procedures and processes prior to initiating operations in a contaminated environment.

Recommendation. Prior to commencing any operation in a contaminated environment law enforcement must ensure that decontamination assistance is coordinated for and available. Experience through exercises indicates that all to often this is assumed and not properly coordinated. It is recommended that, subject to the availability of resources, responder decontamination be established separately from that processing the general public. This will ensure that decontamination is available for responders when needed and allow for special situations that pertain to the responder (i.e. security and decontamination of officers' weapons).

Decontamination for HazMat teams is normally referred to as technical or detailed decontamination. Since HazMat suits are water repellant, procedures for decontamination consist of washing off the suit with hoses and water sprays prior to disrobing from the suit. This form of decontamination is acceptable for the protective ensembles that the IRP recommends for patrol officers but not for those recommended for SWAT. The charcoal style ensembles, such as those recommended for SWAT, should not be wet. Getting these types of suits wet degrades the protective qualities of the suit and may serve to transfer agent trapped in the charcoal layer through the suit on to the wearer. Charcoal ensembles should be removed through a careful and controlled disrobing process. This process basically entails using an assistant or "buddy" to remove the overgarment so that the

wearer does not touch the outside (contaminated) part of the suit while moving through a controlled process that reduces the danger of contamination as the procedure is performed. Details for conducting such decontamination are included in the law enforcement PPE report, *Guidelines for Use of Personal Protective Equipment by Law Enforcement Officers at a Terrorist Chemical Agent Incident,* that is available on the SBCCOM Web site (http://hld.sbccom.army.mil/ in the MIRP section).

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Note: Regardless of the type of suit worn and decontamination procedures used, the respiratory protection (mask) should always be the last element of the protective ensemble to be removed.

Issue: Decontamination of Law Enforcement Equipment

The threat that officers and/or their equipment will get contaminated because of a chemical WMD incident is real. In the case of a large public gathering (e.g., concert and sporting event), officers may already be on the scene and become part of the initial casualties from the attack. Additionally, the first responding officers to a chemical incident may not immediately realize the hazard and may enter a contaminated area. Regardless of how the exposure occurs, departments must be prepared to handle the problems associated with processing law enforcement equipment through decontamination. Of particular concern are weapons, radios, badges, and other highly sensitive equipment. This problem can quickly extend beyond the realm of the individual officer's equipment to include patrol vehicles, robots used to handle bombs (secondary devices), and other specialized team equipment.

Equipment known or suspected of being contaminated must be decontaminated and monitored before it is returned to service. Based on the amount of equipment in question and the need to maintain a community response capability, the senior law enforcement representative from each department must determine the amount of decontamination and monitoring that will be performed on essential equipment.

Recommendation. Contaminated equipment will be separated from the officers at the decontamination line inside the Warm Zone. Officers are not expected to willingly relinquish their equipment to anyone other than a supervisor from their own department. Departments need to be prepared to provide someone inside the Warm Zone who is responsible for the security and processing of contaminated law enforcement equipment. This individual must be properly equipped with PPE.

Decontamination and security of law enforcement are challenges that must be closely coordinated between responder agencies.

Small, nonelectronic equipment can be placed in a bucket or container of bleach. A lockable container is recommended because the equipment will have to remain in the solution for a considerable amount of time (15 to 30 minutes for most agents). Since most decontamination solutions are going to be in liquid form, ammunition should be removed

from firearms and processed separately. Electronic equipment should be double bagged and processed by a laboratory with appropriate guidance based on the agent involved.

All equipment should be monitored to validate the effectiveness of decontamination prior to being returned to service. The level of monitoring should be discussed and approved with on-scene safety officials. Compounding the issue of effective decontamination is the fact that there are no standards established by OSHA or EPA for military chemical warfare agents in the civilian community. The more readily available types of monitoring devices expected to be in possession of the local response community (e.g., M8 paper and chemical agent monitors) provides only gross level detection capabilities. A more detailed level of monitoring, a time consuming process, is necessary and requires equipment that will probably be available only through federal assets.

Small quantities of equipment (e.g., handguns and radios) may be replenished through inter-departmental resources or through mutual-aid support while the contaminated equipment is processed. Equipment obtained through mutual-aid support must be compatible with the gaining department's equipment (e.g., communications and weapons) to be a viable solution to the immediate situation. Otherwise, to continue to provide service to the community, department supervisors may have to decide on returning equipment to service based on results from lower levels of monitoring.

Issue: Security of Victim's Personal Effects

Decontamination studies reflect that the majority of contamination is removed by removal of the outer clothing from an exposed victim. Those individuals who were close to the agent release point are likely to have agent trapped in their clothes. The first step of processing anyone through a chemical decontamination is to remove as much of their clothing as they will permit prior to washing them down. The clothing and personal effects must be bagged, the owner's identity recorded, and the belongings secured until a determination is made on its disposition.

The fire department will handle the processing of victims through decontamination, but law enforcement must be prepared to handle the security of the items collected. An additional interest to law enforcement is the fact that the perpetrator(s) may be among those processed.

Recommendation. The items collected must be segregated and labeled with the owners' identification. This is essential to the investigation if law enforcement determines that someone connected with the criminal act was processed through decontamination. The rights of private citizens concerning probable cause, however, prohibit law enforcement from processing all collected items when looking for evidence.

Items collected from victims will include sensitive items such as keys, wallets, purses, cell phones, and pagers and may not be willingly surrendered. The fire department may elect to bag these items and allow the owner to process through decontamination with them. If law enforcement wants all the belongings of a certain individual (i.e., a suspect to be detained for questioning after decontamination) to be collected, they must relay this to the fire

department IC. Law enforcement should be available to assist with the collection of items from the individual for chain of custody reasons.

Senior officials from the responding agencies as well as local emergency management personnel must determine who has the overall control and disposition authority over the collected personal items.

Issue: Security of Critical Facilities

There are two types of critical facilities that law enforcement may be asked to assist in securing during a chemical attack. The first will be those facilities associated with the processing of casualties from the incident. The second are other key areas that may be the target of additional attacks.

Hospitals and off-site medical treatment centers must establish limited access to keep their facilities from becoming contaminated. This controlled access may cause confusion among the population. Patients may perceive that they are being denied access to care, which could result in panic and unruly conduct.

Just as the threat of secondary devices targeting responders has become a reality, the possibility that the initial attack is part of a series of attacks or a diversion from a separate attack must be considered.

Recommendation. Local law enforcement may not have the manpower to simultaneously handle the incident response and security issues at other locations. Those locations with internal security should do the best they can with their own resources. It is recommended that law enforcement maintain a rapid response team capable of responding to any disturbance that may occur at these locations.

Police intelligence, in conjunction with the local emergency management office, should notify other key areas that are possible targets. Increased security and awareness should be stressed, as well as procedures to report suspicious activities or threats. If there is a clear "theme" to the initial attack (e.g., political, social, racial) similar such groups, organizations, and gatherings, should be warned.

Health and Safety

Issue: Casualty Tracking

Tracking patients from the incident site through the healthcare system is a complex process. EMS, triage, and transportation officers, police investigators, and hospital personnel must identify patients as having been part of the same incident. Identification of all casualties is of paramount concern to assist with public inquiries on the status of people who may be involved in the incident as well as the criminal investigation.

Recommendation. Many patients will enter the healthcare system on their own. Thus, there's a need that hospitals track all patients from the same incident by creating a written log or database. Agencies, including EMS, hospitals, clinics, off-site centers, mass-

casualty care shelters, and the like, should update their logs every 12 hours and report their information to a central location. Typically, jurisdictions establish a "reunification center" to help family members locate their loved ones or to make a missing persons report.

Issue: Disposition of Animal Carcasses

As a chemical agent spreads, all life that exists in the area is subject to exposure. Animal carcasses found in the area should be considered contaminated and their location documented, and then they should be removed to maintain public health and safety. Animal control agencies are often not aware that a basic level of PPE should be worn when collecting suspected contaminated carcasses.

Secondly, these carcasses need to be contained, because they are considered crime scene evidence of a CW terrorist attack.

Recommendation. The health department should notify the office of animal control with information pertaining to the level of PPE and means of containment. It is recommended that animal control personnel, to avoid self-contamination and cross-contamination, wear a minimum of Level-C PPE.

Carcasses should be temporarily stored in 55-gallon drums that can be sealed to avoid chemical agent off-gassing. Once law enforcement collects the samples they need for the investigation, the rest of the remains can be incinerated.

Issue: Mental Health Concerns – Victims Community

Emergency response organizations have programs in place to deal with the emotional stress of responders. Even with such counseling, there is still a vast effect on the mental health of responders as is evidenced in the long-term study of responders to the bombing of the Oklahoma City federal building.

It is expected that the community's mental well-being may be affected because of the trauma associated with a chemical terrorist incident. The number of dead and contaminated will concern the larger community as people realize they are vulnerable to such terrorist acts. The contaminated area may result in quarantining residential areas, leaving people without homes. Many worried-well, those who would not be physically affected by the incident but would be emotionally overwrought, will not be able to cope and may enter the healthcare system for emotional support.

Recommendation. The local health department should set up a mental health outreach center for victims and for the community at large. Critical incident stress debriefing sessions should be organized for the community.

Public announcements should be made specifying the location of the mental health site and encouraging the community to seek help. This center can be collocated at the OST^{3}C; many patients who will enter the center will benefit from some form of counseling.

The mental health site should be linked to the patient tracking system and serve to assist family members seeking information regarding the victims.

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Part V – Long-Term Response and Recovery

Completion of the response to and recovery from a chemical incident will be an extensive and drawn out effort. A well-prepared and organized response to such an event will be the catalyst to a rapid recovery and return to normalcy for a city. The integration of federal assets may be necessary to mitigate long-term medical care of casualties, financial and social recovery, and the ongoing criminal investigation before eventual return to local control is possible.

This section outlines important issues surrounding the long-term recovery process for a community. It provides insight on recovery from the immediate and long-term effects of an attack and care for those affected.

> *Considering the serious nature and potential consequences of any terrorist incident, the Panel is convinced that comprehensive public education and information programs must be developed, programs that will provide straight-forward, timely information and advice both prior to any terrorist incident and in the immediate aftermath of any attack.*
>
> *First Annual Report to The President and The Congress of the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction. RAND 1999, Washington D.C..*

General

Issue: Employee Assistance Programs

Healthcare providers may experience long-term effects from having to manage the overwhelming task of a CW terrorist attack. Many personnel will be affected and perhaps have difficulty performing their jobs, even after receiving Critical Incident Stress Debriefing (CISD) therapy. Employee Assistance Programs (EAPs) need to be notified, since they play a part in the long-term recovery of their personnel.

Recommendation. Personnel should go through CISD as soon as possible. If the agency EAP is not prepared to initiate CISD, then an outside agency should be called for support. The International Federation of Critical Incident Stress Debriefing developed by Jeffery Mitchell, Ph.D. and George Everley, M.D., can be contacted for further recommendations.

EAPs should be prepared to respond to their employees' needs based on the circumstances of the CW incident and what role their facility played in the overall operation.

Emergency Response

Issue: Replacement of Contaminated Equipment

Replacing contaminated equipment after a CW incident will be a critical concern for all departments. Verification that equipment is clean is expected to be a major task. It cannot

be assumed that equipment will be cleared for return to service in an expedient manner, if at all. Expeditious temporary or permanent replacement is paramount to provide service for the community's daily needs.

Recommendation. The need for replacing contaminated equipment must be a top priority to continue service to the community.

Purchase of emergency apparatus can cause a tremendous financial impact on any department. Departments should investigate and be familiar with the procedures necessary for reimbursement once a federal disaster is declared. Other alternatives include emergency assistance programs offered by various dealers and manufacturers.

Contamination of response equipment is a concern for all communities. The need exists to continue to provide emergency services regardless of the impact from the event.

Law Enforcement

Issue: Long-Term Scene Security

A WMD event is expected to initially cover a large operating area. The attack venue, which may include a large gathering area (e.g., sporting event), use of multiple agent dissemination points, and an airborne contamination threat are factors relating to the initial size of the incident scene. As the incident is controlled and hazards are mitigated, the size of both the response and crime scene will be reduced. Based on the chemical agent used, the area immediately surrounding the dissemination point may remain contaminated. Processing of the scene is expected to be an extensive operation, and access to the incident site will have to be controlled throughout the process.

Recommendation. Initial scene security will be a manpower intensive operation for law enforcement. Controlled ingress and egress must be closely coordinated with the fire department and EOC. Investigation of the scene and possible long-term contamination hazards could require security for an extensive period of time. As the size of the controlled area is reduced and the extent of the crime scene determined, law enforcement is expected to turn to a more fixed type of security as a method of access control. This includes temporary fencing around the crime scene with controlled access gates.

In addition to the standard controlled access for a crime scene, law enforcement and/or scene safety officials may be required to monitor personnel entering the area for proper protective equipment and to ensure that decontamination is conducted prior to departure.

Issue: Contaminated Equipment Monitoring

The fact that law enforcement equipment may become contaminated and require decontamination is discussed in Part IV of this document. Monitoring of decontaminated

equipment and material, however, is considered the final step to the process. Only after verification that all agent has been removed or neutralized can it be determined safe to return equipment to service.

Recommendation. Departments should coordinate monitoring their equipment through the emergency management office. The level of monitoring and type of detector should be coordinated by the community following advice from various federal agencies including, but not limited to, the Department of Defense (DoD), EPA, and OSHA.

Low-level monitoring will most likely only be available through federal response agencies.

It is important that supervisors know that thorough (low-level) monitoring is resource-intensive costly and time consuming. Although the resources will most likely be made available through federal agencies, departments may have to operate without their equipment for a considerable period of time (several days or more, depending on the amount of equipment requiring monitoring and the availability of resources). Equipment can include everything from vehicles and firearms to individual officer protective gear such as their ballistic vests. Departments must look at how they will continue to provide support and respond to the community during this time.

Equipment that is contaminated and unable to be decontaminated to a safe level will have to be destroyed. Funds for replacement equipment may have to be processed through federal grant channels, which will be a time consuming process.

Health and Safety

Issue: Fatality Management at the Scene

Medical Examiners face three primary differences from their normal operating procedures when handling contaminated remains from a chemical terrorist incident.

- Medical examiners may need to wear PPE to operate within the Hot Zone as well as when handling contaminated remains or personal effects.
- Medical examiners will need to gather evidence before remains are decontaminated. This means that the medical examiner must perform external evaluations at the incident site.
- Remains must be decontaminated at the incident site before they are moved to another location to minimize as much cross-contamination as possible.

Recommendation. *Wearing PPE.* Despite not having the training or equipment to enter a Hot Zone, medical examiners are not relinquished of their duties to manage fatalities from a chemically contaminated incident. Though other agencies like the FBI and DMORT are able to support fatality management efforts under specific circumstances, they are not able to perform all the duties a medical examiner is expected to perform.

All ME/C personnel do not need to be prepared to enter a Hot Zone in Level-A PPE. Recovery of remains may occur hours, if not a day or two, after the initial incident. Hazardous waste products may not be nearly as concentrated at this point in time, thereby

requiring a reduced level of PPE. The medical examiner should coordinate with the IC as to the level of PPE required at the time of their entry.

Medical examiner's should train and equip a specialized team to wear Level A PPE. At least four individuals should be able to enter a Hot Zone, whereas the rest of the medical examiner personnel only need to perform their tasks in Level C PPE. The two teams of individuals wearing Level A should evaluate the scene to determine manpower and resource needs to process remains.

Gathering Evidence. The medical examiner should establish an evaluation team that can enter a Hot Zone with the lead-investigating agency to determine how to best process the crime scene and how to process remains. All regional FBI offices have a WMD Coordinator capable of entering the Hot Zone. Additionally the FBI has one special team called the Hazardous Materials Response Unit (HMRU) that is equipped to collect evidence inside the Hot Zone. If both agencies are equipped to enter the crime scene then collectively they can determine the joint investigation procedures needed to process the scene. The medical examiner must, perform external evaluations and gather personal effects at the incident site, prior to decontamination efforts.

Gross Decontamination. All remains must be grossly decontaminated before they are removed from the scene to minimize cross-contamination.

Gross Decontamination efforts begin with the removal of clothing and flushing of the body with water. It is recommended that medical examiners perform a gross decontamination on scene followed by a detailed decontamination prior to processing the body at the morgue. The scene may already have decontamination lines that were established for live patients that can be used to process the remains. Decontamination studies indicate the following:

- Water alone is an excellent decontamination solution.
- Adding soap aids in dissolving oily substances like mustard or blister agent.
- Bleach (sodium hypochlorite) and water solution remove, hydrolyze, and neutralize most chemical agents.

* *Note:* Studies conducted by the U.S. Army Mortuary Affairs Center determined that a low concentration of bleach 2 to 3 percent did not present any negative effects (e.g., loss of color or damage to skin) to remains. Higher concentrations, such as straight household bleach (5.25 percent) were not tested, but it is believed that they would have a negative impact on tissue.

The medical examiner should establish an agreement with an agency that is equipped to establish a decontamination line, is capable of operating in PPE, is familiar with decontamination procedures, and has the manpower and equipment necessary to perform the operation. When requesting such assistance, consideration must be given to the mission being performed. Although many jurisdictional agencies may have the ability to perform gross decontamination, their organization may not be inclined to decontaminate human remains.

Also of importance is the issue of contaminated water runoff. The EPA issued a decision indicating that mitigating water runoff should not take precedence over performing life-saving measures. This may not extend to processing the deceased. The medical examiner must therefore ensure that there is a system in place to contain water runoff before decontamination is initiated.

Additional recommendations are outlined in the *"Guidelines for Mass Fatality Management During a Terrorist Chemical Agent Incident"* available on the SBCCOM web site.

Issue: Fatality Management at the Medical Examiner's Office

Contamination issues change the standard procedures for processing remains.

Managing a mass number of fatalities from a chemical terrorist attack changes the normal procedure for processing remains.

Tracking remains is complicated because remains must undergo decontamination before they are removed from the incident site. Some EMS jurisdictions already use a waterproof tag with peel-off stickers relating to the triage tag number or bar codes. Exercises conducted by the CWIRP using some of these tags have indicted additional problems still exist with their use. The tags hold up well when wet, but it is almost impossible to write on them afterward. Also, the peel-off stickers don't adhere well after being wet. Additionally, tagging methods that are used by EMS and those used by the medical examiner are not always compatible.

The number of fatalities may influence the type of transportation needed to move remains from the incident site to a temporary morgue or autopsy area. Typically, storage areas at an medical examiner's office do not provide adequate space, and it is preferred that the remains from the same incident be centrally located.

The length of time needed to process remains will be extended because this is a chemical incident. Influencing factors include the number of fatalities involved, decontamination requirements, and the need to process remains in PPE.

Recommendation. Since remains must be decontaminated before they are moved from the incident site, tracking a large number of chemically contaminated fatalities is made easier with a waterproof tag. If manufacturers resolve the above drawbacks, the general concept provides a clear advantage to the agencies involved with processing victims and fatalities. Peel-off stickers are easy methods to rapidly account for personal belongings and paperwork associated with the remains. Bar code scanners also simplify the recording/tracking process because they are portable and can be used in the field.

Refrigerating remains is the optimal means of storage, since it gives the medical examiner additional time to process remains while mitigating any public health hazard. Depending on the number of fatalities, however, normal refrigerated storage units may not be able to

accommodate the needs. As an alternative storage site, refrigerated trucks and/or rail cars can be used for storage as well as transportation. To ease handling, remains should not be stacked unless shelving units are used. Even with shelving units, it is recommended that remains not be stacked above waist level to accommodate those handling the remains. Typically, a railroad car can accommodate 32 to 40 bodies in this manner (Military Planning for Health Services Support, 1994).

Other locations should be identified early as potential storage locations. Possible locations include the state anatomy board and/or small buildings or rooms that can be cooled to 35 °F. Other options include obtaining air conditioning units that can cool a large room or small building to 35 °F. Further consideration when identifying storage locations is that the area must be secured by law enforcement personnel until they release the body as part of the investigation.

Some jurisdictions have the capability of embalming a mass number of remains quickly. Incorporating embalming into the disaster response plan may simplify decisions regarding final disposition. The benefits of embalming include the following:

- Remains can be held for a longer period of time while evidence is gathered.
- Refrigeration units are necessary only for those remains identified for autopsy.
- A higher level of safety is ensured if remains are decontaminated twice, embalmed, and undergo a final rinse so that decontamination demands are not passed to local morticians.
- Embalming provides a 7- to 10-day opportunity for an open casket viewing, and it provides a 2- to 3-week window of time before refrigeration becomes necessary.

The size of the incident may dictate the use of a temporary morgue site and/or a temporary autopsy area. Many medical examiner offices currently have plans developed to perform operations outside their facility if they are forced to evacuate the building. Medical examiners can use these evacuation plans as a starting point in establishing a temporary operation area in response to a disaster.

In terrorist situations, the FBI must gather as much evidence as possible to prosecute the case. Unfortunately, when the number of fatalities goes beyond a medical examiner's annual caseload, the medical examiner's office may face a code 2 license violation. Additionally, it may be impractical to perform autopsies on all remains (to perform 200 autopsies would require 52 medical examiners and more than 2 weeks to complete).

Although all remains should have an external examination, the medical examiner and the FBI WMD coordinator should collectively determine the following based on the medical examiner's capacity and the FBI's needs:

- Determine if all remains require additional tests, (e.g. blood draw and skin biopsy).
- Identify which remains will be autopsied.
- Specify atypical cases requiring autopsy.

- Identify a second group of remains that can be autopsied at a later time if there is a need for additional evidence.
- Embalm other remains quickly, since most medical examiners would rather autopsy embalmed remains than deteriorated ones.

In addition to decontamination performed at the incident scene, a second detailed decontamination should be performed before an autopsy or embalming is conducted. Level-C PPE will provide adequate protection for this. **Prior to embalming, this decontamination should be performed in a separate location, since bleach and embalming fluid are a toxic combination.** After embalming, remains should be thoroughly rinsed because embalming may resurface contaminant.

Performing autopsies on chemically contaminated remains requires medical examiner personnel to wear PPE. As long as the remains have been decontaminated, Level-C PPE will provide adequate protection. Level-A/B PPE is impractical when performing autopsies since it provides only 20 to 30 minutes of air and causes greater fatigue to the wearer.

It is possible that the remains may also be internally contaminated, which can pose a limited threat to those performing autopsies. For added protection butyl rubber gloves should be worn instead of latex gloves. The internal organs, however, should pose no additional hazard or off-gassing. Chemicals are metabolized, hydrolyzed, or tightly bound in the body's tissues, and therefore, they do not pose any more of a threat than handling the external portions of the remains.

In situations involving a large number of fatalities, the workload will quickly exceed the capacity of the local/state medical examiner's office. The federal Disaster Mortuary Operational Response Team (DMORT) is capable of supporting a local jurisdiction without a Presidential Disaster Declaration.

DMORT is a part of the Health and Human Services (HHS)/U.S. Public Health Service (USPHS) and, specifically, a part of the National Disaster Medical System (NDMS). There is one team for each FEMA Region, and the teams comprise private citizens with expertise in victim identification and mortuary response. The team is federalized when it responds to a Presidential Disaster Declaration. Since 1993, DMORTs have been deployed 18 times.

DMORTs work under the jurisdiction and guidance of the local authorities (e.g., medical examiner/coroner and law enforcement) and other federal and state agencies. They are capable of providing the following:

- Management of victim identification and mortuary services.
- Assistance in search and recovery.
- Mobile morgue capabilities, including autopsy, identification, and tracking of remains.
- Victim identification.
- Family Assistance Center.
- Ante-mortem data collection (computerized with morgue management software).

- Support personnel.

Although DMORT members are capable of managing an operation on their own, they do not take command and control of an incident away from a local jurisdiction. The local jurisdiction remains responsible for signing death certificates, gathering evidence, collecting personal effects, and providing the primary aspects of family assistance.

It is recommended that medical examiners consult their regional DMORT administrator to discuss their operating procedures and obtain a more indepth understanding of their capabilities, including procedures for requesting their assistance. Additional recommendations are outlined in the *"Guidelines for Mass Fatality Management During a Terrorist Chemical Agent Incident. "available on SBCCOM web site.*

Issue: Fatality Management – Final Disposition of Remains

Determining the final disposition of remains may be a complicated process when there are a large number of remains to process or when contamination persists even after decontamination. It is important to note that the CWIRP Mass Fatality Management Working Group operated with one principle in mind: the effort to return remains to family members far outweighs procedural simplicity and that only under extreme circumstances should remains be withheld from family members.

Only under extreme circumstances is it expected that remains will not be returned to families.

Recommendation. Each state has laws pertaining to the final disposition of remains. Generally, laws state that remains must be given to family members upon request and cannot be disposed of as the state chooses. If the medical examiner, local health department, and other agencies determine that a public health hazard exists, a request for emergency declaration can be made to the governor that precludes the current law governing disposition of remains. If the decision is based on the purpose of protecting the health of the citizens, then there is no limitation established by legal statue. It is expected that these provisions will apply in the case of a chemical WMD incident.

Remains should be placed in temporary storage units after decontamination until a decision is made on final disposition. The decision to return remains to family members for burial depends on whether they are considered decontaminated and safe for local morticians to handle as well as for family members to view. Ensuring remains are not contaminated is a lengthy process. The procedures recommended by the U.S. Army Mortuary Affairs Center for service members exposed to chemical agents during time of war involve decontamination and monitoring of each body with highly sophisticated chemical detectors. This process is time consuming and costly and requires highly trained personnel who are familiar with the detectors. Provided that contamination does not exist after these procedures are performed, the remains are considered safe enough to be returned to family members. The working group does not suggest monitoring each individual remain because

of the time and expense involved. Instead they recommend monitoring the storage unit housing the remains to determine if contamination exists.

The working group discussed returning remains under "sealed casket procedures" as a measure to increase safety. It was determined however, that most morticians do not understand and/or comply with sealed casket procedures. It was further stated that caskets are never 100 percent sealed.

When contamination cannot be mitigated through decontamination, individual cremation should be arranged. A jurisdiction should know the location and capacity of their crematoriums. Remains that are cremated will not pose an environmental hazard because the heat needed to perform the cremation will destroy any residual agent.

Involuntary cremation will carry a great deal of public scrutiny. The medical examiner's office and the city's emergency manager should seek to incorporate the support of religious leaders in the community when making an announcement regarding any disposition of remains that does not involve return to the family.

The working group also discussed the issue surrounding voluntary organ transplants of victims of a chemical agent incident. The Maryland Transplant Resource Center was consulted and indicated that donor candidacy is based on brain death with all other bodily functions sustained by lifesaving measures. Chemical agent exposure does not necessarily preclude organ donation; however, the factors associated with the criminal investigation and evidence surrounding the body may preclude meeting the medical criteria for transplants. The medical examiner and law enforcement officials should be prepared to address this issue when victims from a chemical terrorist incident die in hospital settings.

Issue: Nonhuman Remains

As a chemical agent spreads, all life that exists in the area is subject to exposure. Animal carcasses found in the area should be considered contaminated and their location documented. Although not specifically the responsibility of the medical examiner, contaminated animal remains may be an issue following a chemical terrorist incident. A serious health risk may exist when there are a large number of contaminated carcasses in public areas. It is possible that animal control officials and the medical examiner may be consulted on the procedures to gather and dispose of these remains.

Recommendation. The health department should notify the office of animal control with information pertaining to the level of PPE and means of containment. It is recommended that personnel handling contaminated animal remains wear a minimum of Level C PPE.

Animal remains are considered evidence. These remains should be collected, tagged, and listed according to the specific area where they are found. Small animal remains can be sealed in 55-gallon drums. The lead law enforcement agency should be consulted to ascertain the need to preserve the carcasses for investigative purposes.

Resources should not necessarily be allocated for decontamination of animal remains. The IC should be consulted regarding PPE prior to anyone handling the remains; however, Level-C PPE is expected to provide sufficient protection in most instances.

Contaminated carcasses should be incinerated. Time and resources may dictate that a mass incineration of all animal remains is the best solution.

Issue: Environmental Protection – Verification of Clean

After the initial event has occurred and order is restored, the local health department will need to address follow-on response issues. Hospitals and off-site treatment facilities that decontaminated patients will need to be "cleaned" prior to reinstating them to their original purpose. Medical equipment, ambulances, and transport vehicles will also need to meet this standard. These areas and equipment need to be tested and certified as clean.

Problems exist in determining this level in the civilian community. Air quality monitoring only clears equipment to a military acceptable level, commonly referred to as "3X." In the event of a CW terrorist incident, the EPA and OSHA must come on line with criteria for evaluating agent-contaminated material in the civilian community.

Verification of cleanness will require highly sensitive monitoring equipment and is an extensive, time consuming process.

Subsequent to the clean standard is the concern that, even when a hospital or off-site treatment facility is deemed "clean," the general public will not have confidence to reenter these facilities. Specifically, parents may not allow their children to return to a school that was once used as an OST^3C.

Recommendation. The local health department should seek the input of EPA in determining the level of clean specific to the agent and extent of contamination. Federal support will be necessary to evaluate facilities and equipment. Any area or piece of equipment that is known to have been directly contaminated, meaning a contaminated victim had direct contact with an ambulance, piece of equipment, or facility area, will need to be put out of service until it is evaluated. Consequently, the local health department should choose the location of off-site treatment facilities carefully to avoid closing down a new building.

Facilities and equipment that were used for the treatment of decontaminated victims will need to be put out of service until they are scrubbed. The general belief is that facilities and equipment that managed to avoid direct contamination do not need to go through specific evaluation, but may be subject to random testing to ensure overall safety.

When hospitals and off-site facilities are able to comply with an established EPA standard of clean, a council of city officials may need to broadcast a public address stating the facilities are in fact clean, and a description of EPA's standards may be necessary to instill public confidence.

Part VI – Participating Agencies

SBCCOM has developed a working partnership with numerous federal, state, and local agencies and organizations to solicit a variety of expert opinions on the functional areas aligned under the CWIRP. The individuals from these agencies have dedicated a great deal of personal time in providing input to the recommendations published in this document.

Federal Partners

Director of Military Support (DOMS)
Disaster Mortuary Operational Response Team (DMORT) Region 3
Federal Bureau of Investigation (FBI), Baltimore Field Office and FBI Headquarters
Federal Emergency Management Agency (FEMA)
U.S. Department of Energy (DOE)
U.S. Department of Health and Human Services (HHS)
U.S. Environmental Protection Agency (EPA)
U.S. Public Health Service (USPHS)
U.S. Army Aberdeen Proving Ground Fire Department
U.S. Army Medical Research Institute of Chemical Defense (USAMRICD)
U.S. Coast Guard Security

Maryland State Partners

Department of Health and Mental Hygiene
Department of Public Safety and Correctional Services
Maryland Department of Agriculture
Maryland Emergency Management Agency (MEMA)
Maryland Institute for Emergency Medical Services Systems (MIEMSS)
Maryland National Guard
Maryland State Police (MSP)
Maryland Transportation Authority Police
Mass Transit Administration Police Force
Office of Chief Medical Examiner

Local Partners

Anne Arundel County Fire Department
Baltimore City Fire Department
Baltimore City Health Department
Baltimore City Office of Emergency Management
Baltimore City Police Department
Baltimore County Fire Department
Baltimore County Office of Emergency Preparedness
Baltimore County Police Department
Carroll County Office of Emergency Management
District of Columbia Fire and Emergency Services

Harford County Sheriff's Office
Howard County Fire and Rescue Services
Howard County Police Department
Metropolitan District of Columbia Police Department
Montgomery County Fire and Rescue Service
Montgomery County Police Department
New York City Police Department (NYPD)
Philadelphia, PA Fire Department
Prince George's County Police Department
Talbot County Office of Emergency Management

Private Partners

American Red Cross
Johns Hopkins University

Part VII – Program Reports

The CWIRP identified several issues pertaining to emergency response and personal protection that required detailed specific scientific study to draw conclusions on the successful application to a chemical WMD response. These issues were researched through a series of studies that involved SBCCOM technical experts supported by local response organizations from the CWIRP.

These studies are documented in individual reports by SBCCOM. Copies of these reports that can be downloaded are on the SBCCOM Web site. At the time of printing this document, the Web site is http://hld.sbccom.army.mil.

Reports

Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist Chemical Agent Incident. Final Report dated July 2003.

Use of Positive Pressure Ventilation (PPV) Fans to Reduce the Hazards of Entering Chemically Contaminated Buildings. Final Report dated October 1999.

Chemical Protective Clothing for Law Enforcement Patrol Officers and Emergency Medical Services when Responding to Terrorism with Chemical Weapons. Final Report dated November 1999.

Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident. Final Report dated January 2000.

An Alternative Health Care Facility. Concept of Operations for the Off-Site Triage, Treatment, and Transportation Center (OST^{3}C). Final Report dated March 2001.

Guidelines for Mass Fatality Management During Terrorist Incidents Involving Chemical Agents. Final Report dated November 2001.

Guidelines for Use of Personal Protective Equipment by Law Enforcement Personnel During a Terrorist Chemical Warfare Agents Incident. Final Report dated June 2001.

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Part VIII – Supporting Information

Training Recommendations for Law Enforcement

Basic Training

Each level of departmental training should include training on the basic Awareness and Operations level of the Domestic Preparedness city training. This focuses on the basic areas of nuclear, biological, and/or chemical (NBC) agents as outlined below:

Awareness	**Operations**
Threat	Responder actions
Agent characteristics	Hazard prediction
First aid	PPE
Protection	Detection and identification equipment
Detection	Emergency decontamination
Self-decontamination	
Agent recognition	

This training is basic and broad in its scope and content. Therefore, more enhanced training in some topics included in the Awareness and Operations courses are recommended in the specialty training listed below.

After review of this Playbook and associated law enforcement technical reports, departments should identify what procedures they will incorporate into their operating procedures. In addition to the basic Awareness and Operations topics, departments should tailor their training programs to include accepted procedures with emphasis recommended on the following:

- Training should clearly outline the role and mission identified for officers and specialized teams. This should include the contamination threat and associated PPE.
- Departments should conduct threat and vulnerability analysis' to include identification of the types of individuals/groups that may consider use of chemical terrorism and potential targets in the area.
- The fact that contaminated items need to stay in the contamination reduction corridor (Warm Zone) until they are decontaminated and monitored is of paramount concern to law enforcement officers. It is against the very instinct of every officer to relinquish their equipment, especially their firearm, to anyone other than a direct supervisor. Advance information regarding decontamination requirements will assist in alleviating problems when the situation arises.

The above listed training is recommended for all personnel. Additional training recommendations for specific roles/teams are also provided.

Training by Specialty

Patrol Officer

Protective Equipment

Departments must determine what type and style, if any, of protective equipment they will provide to their basic patrol officer. Recommendations on protective equipment are provided in the law enforcement PPE guideline report.

Officers must receive basic training on the correct operation, use, and wear of the equipment they are provided. Individual maintenance to keep the equipment serviceable must not only be taught, but the performance of routine operators' maintenance must be enforced and checked. Wearing improperly maintained PPE can be just as life threatening as wearing no PPE.

The limitations of the protection afforded by the PPE must be stressed. A standard respirator and protective suit are not as protective as a HazMat Level-A suit. Officers cannot assume that because they have some form of protection that they can enter all contaminated areas. These limitations must clearly be made known to save officers' lives.

Threat of Secondary Devices

The use of secondary devices targeting responders has become a reality. It can only be expected that the use of such devices would be a possibility in conjunction with a WMD attack. In fact, a WMD may be the secondary device and not the initial action that brings responders to the scene.

Officers should be briefed on types of devices that can be used to disseminate C/B agents.

SWAT

Protective Equipment

In addition to the types of equipment training specified for the basic patrol officer, PPE for Special Weapons and Tactics (SWAT) teams may also include some form of voice amplification system. SWAT teams must train in their PPE, since they will clearly be affected by this equipment. Teams should perform all aspects of their mission in full protective equipment. This should include live fire qualification in PPE.

HazMat Responder Training

SWAT teams will be expected to operate in areas where there is greater risk of agent exposure and dissemination. As a result, it is recommended that they receive formal HazMat responder training. This can best be accomplished through a memorandum of agreement (MOA) with the local fire department.

Decontamination

Teams should be instructed on specific immediate decontamination steps to take if a device activates or they become contaminated. This would be an extension of the basic decontamination received under the awareness training.

SWAT teams may be expected to undergo complete decontamination upon termination of their mission. This will definitely be a requirement if there is any type of agent release. This decontamination will be the same as the decontamination that a HazMat team would undergo. The specifics of a technical decontamination should be trained and be a part of the team's rehearsal for a mission involving C/B agents. Actual setup and conduct of the technical decontamination should be performed by the fire department in support of the police operation.

Recognition of C/B Devices and Agents

SWAT officers are second only to bomb technicians in possibly encountering C/B devices. Additional training should be given on recognizing C/B devices and on the physical characteristics of the agents.

Incident Command

Reality of NBC Threat

Nowhere is this training more important than at the supervisory and command levels. If the department's leadership does not understand and accept the threat of NBC agents being used by terrorists' organizations, militia groups, or lone individuals, then there will be no enhanced preparedness within the department. Formulation of the threat training and vulnerability analysis for the area should be a joint effort of the local and state police departments in conjunction with the local FBI office.

Unified Command

Possibly, the greatest challenge facing the senior official on the scene will be operating as part of a unified command. Police, fire, emergency management, and many local and state agencies can be expected to quickly converge on the scene. Initial command of the incident will most likely rest with the fire department until the rescue of lives is complete. It is normal for each agency to want to operate in their own boundaries and with their own command structure; however, only through good cooperation and communication can all agencies effectively perform their missions and support one another. Drills and exercises focusing on a unified command are essential to the development of a relationship between various agencies that will allow for a focused response to a terrifying event. Exercises must continue beyond the local level of response, as various state and federal agencies will come into play and, at times, manage various aspects of the incident.

Incident Management Challenges

WMD scenarios pose specific challenges for the commander on the scene. As specified under the basic training recommendations, there is a potential for limited loss of major items of equipment. Additionally, the release of an agent could potentially affect the

majority of the responders on the scene. These individuals would then have to be taken from their post or mission to undergo decontamination and possibly receive first aid.

Officers operating in PPE pose additional concerns. Any type of PPE will cause additional heat buildup and stress on the body. Officers may have to be rotated more frequently to allow them the opportunity to rehydrate. Operating in PPE also poses a psychological strain on individuals, especially over prolonged periods.

Support Requirements to State and Federal Law Enforcement Agencies

As mentioned above there will be times and instances when various state or federal agencies will assume command of a WMD scene. Local departments should know the specific policies of their state police in response to a WMD incident. It can be expected that all incidences involving the release of a WMD agent will receive response from the FBI. Their involvement will either be in support of the local and/or state police, or they will assume control of the investigation and require the assistance of the local police. These command relationships for the most part are already in place in normal operations. Specific support requirements for a WMD incident should be determined and trained before becoming a response issue.

Bomb Squad

Personal Protective Equipment

PPE for bomb technicians is basically limited to one type of standard C/B bomb suit. This equipment affords basic C/B agent protection while maintaining about 70 percent of the total blast protection of a standard bomb disposal suit. This suit is expensive, and departments will probably to rely on money from the federal grant process to purchase it.

Numerous C/B exercises have resulted in situations where it became necessary for a bomb squad to clear an area (predominantly a building) of explosive devices (perform a sweep or actual render-safe procedures [RSP]) in an area already contaminated by an agent release. Without the above-mentioned C/B bomb suit, this has presented a very real problem.

HazMat Technician

In addition to being the most likely law enforcement personnel to wear Level A protection, bomb technicians are most likely to encounter and handle C/B agents and devices. It is agreed that they would receive valuable training in handling these materials by completing the HazMat technician level of training afforded to fire department HazMat teams. Currently, all FBI certified bomb technicians undergo 40 hours of HazMat/WMD training as part of their recertification.

Increased Decontamination Procedures

As mentioned in the SWAT training recommendations, bomb technicians have the highest possibility of being exposed to harmful agents. Therefore, they should receive increased training on the individual decontamination measures and the procedures necessary for undergoing complete technical decontamination (e.g., HazMat).

Recognition of C/B Agents, Devices, Laboratories

Bomb technicians also need additional training on agent physical characteristics and the items that would comprise a clandestine agent lab.

Remote Detection of Agents

The use of robots should be considered for reconnoitering devices and carrying agent detection equipment.

Render-Safe Procedures for C/B Devices

Technicians need training on the specifics of C/B agent devices that differ from the standard explosive devices that they normally may encounter. Additional training on C/B IEDs has been included in the training conducted at the Redstone Arsenal in Huntsville, AL.

Communications

Keys to Recognition of C/B Threat or Incident

Operators receiving 9-1-1 calls must be able to recognize key indicators that a mass-casualty or C/B incident has taken place. They should be given a checklist of questions to ask as soon as they perceive the possibility of a C/B attack or threat.

Operators must be trained to pass a suspected or actual C/B threat on to all responding agencies and all agencies contacted. For the most part, it will be the information gained and provided by the dispatchers that will save the lives of the first responders on the scene.

Agencies for Automatic Notification if a Dispatcher Suspects a C/B Threat or Incident

Departments should have a standard list of emergency response, emergency management, and medical organizations that will be notified immediately on the suspicion of a C/B incident or threat. Rapid notification of all possible agencies that will be involved will assist in the total response effort. This list should include the input of local, state, and federal partners.

Procedures for Continued Operations in Case of Loss of Communications Center

All agencies should train and conduct exercises involving the loss of standard communications. In addition to the police department, joint training with other response agencies (especially the fire department) should be conducted without radio communications. The fact that radio transmission is not allowed within 300 meters of a suspected or unknown explosive device renders this a very likely situation involving a C/B device.

Crime Lab/Investigations

All investigative and evidence collection procedures for a C/B incident will likely be handled by the FBI. It may be necessary for local and state law enforcement agencies to support their efforts. The training listed below is recommended for investigators in case of

this necessity. It is not meant to train local departments to conduct procedures in lieu of waiting for federal response.

HazMat responder, PPE, and advanced C/B agent device recognition training is recommended, as mentioned for SWAT and bomb technicians.

Sampling, Packaging, and Preservation of C/B Evidence

Collection, packaging, and preservation of C/B agents require specific equipment and procedures. The FBI should assist in the development of training on the procedures necessary for this type of scenario.

CWIRP Playbook

Performance Objectives Matrix

Performance Requirements *Legend for requirements:* ○ -basic level ● advanced level ♦specialized						
Competency level		Awareness		Operations	Technician/ Specialist	Incident Command
		Employees	Responders			
Examples		Facility workers, hospital support personnel, janitors, security guards	Initial firefighters, police officers, 911 operators/ dispatchers	Incident response teams, EMS, basic HazMat personnel on scene	Incident response team specialists, technicians, EMS advanced, and medical specialists	Incident commanders
Areas of Competency	Ref.					
1. Know the potential for terrorist use of NBC weapons: - What nuclear/biological/chemical (NBC) weapons substances are. - Their hazards and risks associated with them. - Likely locations for their use. - The potential outcomes of their use by a terrorist. - Indicators of possible criminal or terrorist activity involving such agents. - Behavior of NBC agents.	C, F, M, m, G	○ ○ ○ ○	● ● ● ● ●	● ● ● ● ● ●	● ♦ ● ● ● ♦	● ● ● ● ● ●
2. Know the indicators, signs, and symptoms for exposure to NBC agents and identify the agents from signs and symptoms, if possible.	C, F, M, m	○	●	●	♦	●
2a. Knowledge of questions to ask caller to elicit critical information regarding an NBC incident.	G, m		● (911 only)			
2b. Recognize unusual trends which may indicate an NBC incident.	G, m		●	●	♦	●
3. Understand relevant NBC response plans and standard operating procedures (SOP) and your role in them.	C, F, M, m	○	●	●	●	●
4. Recognize and communicate the need for additional resources during an NBC incident.	C, m, G	○	●	●	●	●
5. Make proper notification and communicate the NBC hazard.	C, F, M, m	○	●	●	●	●
6. Understand: - NBC agent terms. - NBC toxicology terms.	C, F, m	○	●	● ● (EMS-8 only)	● ●	● ●
7. Individual protection at an NBC incident: - Use self-protection measures. - Properly use assigned NBC protective equipment. - Select and use proper protective equipment.	C, F, M, m	○	●	● ● ●	♦ ♦ ♦	● ● ●
8. Know protective measures and how to initiate actions to protect others and safeguard property in an NBC incident.	F, M	○	●	●	●	●
8a. Know measures of evacuation of personnel in a downwind hazard area for an NBC incident.	M, G		●	●		●

Performance Requirements *Legend for requirements:* ○ -basic level ● advanced level ♦specialized						
Competency level		Awareness		Operations	Technician/ Specialist	Incident Command
		Employees	Responders			
9. CB decontamination procedures for self, victims, site/equipment, and mass casualties: - Understand and implement. - Determine.	C, F, M, m	○ self	●	● ●	♦ ♦	● ●
10. Know crime scene and evidence preservation at an NBC incident.	F, M, m	○	● (except 911)	●	●	●
10a. Know procedures and safety precautions for collecting legal evidence at an NBC incident.	F, G, m		●	●	♦	●
11. Know federal and other support infrastructure and how to access in an NBC incident.	C, F, M, m		○ (911 only)	○	●	♦
12. Understand the risks of operating in protective clothing when used at an NBC incident.	C, F, m		○	●	●	●
13. Understand emergency and first aid procedures for exposure to NBC agents and principles of triage.	F, M		○	●	♦	○
14. Know how to perform hazard and risk assessment for NBC agents.	C, F, M, m			●	♦	●
15. Understand termination/all clear procedures for an NBC incident.	C, F, m			●	●	●
16. Incident Command System/Incident Management System - Function within role in an NBC incident. - Implement for an NBC incident.	C, F, M			●	●	♦ ♦
17. Know how to perform NBC contamination control and containment operations, including for fatalities.	C, F, M, m			●	♦	●
17a. Understand procedures and equipment for safe transport of contaminated items.	G, m			●	♦	●
18. Know the classification, detection, identification, and verification of NBC materials using field survey instruments and equipment, and methods for collection of solid, liquid, and gas samples.	C, F, M, m			○	♦	●
19. Know safe patient extraction and NBC antidote administration.	F, m			● (medical only)	♦ (medical only)	○
20. Know patient assessment and emergency medical treatment in an NBC incident.	M, m, G			● (medical only)	♦ (medical only)	
21. Be familiar with NBC related public health and local EMS issues.	G			● (medical only)	● (medical only)	○
22. Know procedures for patient transport following an NBC incident.	F, G			● (medical only)	● (medical only)	○
23. Execute NBC triage and primary care.	G			●	♦ (medical	

Performance Requirements *Legend for requirements:* ○ -basic level ● advanced level ♦specialized						
Competency level		Awareness		Operations	Technician/ Specialist	Incident Command
		Employees	Responders			
				(medical only)	only)	
24. Know laboratory identification and diagnosis for biological agents.	G				♦ (medical only)	
25. Have the ability to develop a site safety plan and control plan for an NBC incident.	C, F				♦	♦
26. Have ability to develop an NBC response plan and conduct exercise of response.	G, m					●

Legend for references:
C - 29 CFR 1910.120 (OSHA Hazardous Waste Operations and Emergency response)
M - Macro objectives developed by a training subgroup of the Senior Interagency Coordinating Group
m - Micro objectives developed by U.S. Army Chemical & Biological Defense Command
G - Focus Group workshop
F - NFPA Standard 472 (Professional Competence of Responders to Hazardous Materials Incidents) and/or NFPA Standard 473 (Competencies for EMS Personnel Responding to Hazardous Materials Incidents)

United States
Environmental Protection
Agency

Office of Solid Waste
and Emergency Response
(5104)

EPA 550-F-00-009
July 2000
www.epa.gov/ceppo/

CHEMICAL SAFETY ALERT

FIRST RESPONDERS' ENVIRONMENTAL LIABILITY DUE TO MASS DECONTAMINATION RUNOFF

The Environmental Protection Agency (EPA) is issuing this alert as part of its ongoing effort to provide information on environmental issues related to biological, chemical, and nuclear terrorist incidents. EPA publishes *Alerts* to increase awareness of possible hazards and environmental concerns. It is important that SERCs, LEPCs, emergency responders and others review this information and take appropriate steps to minimize risk.

PROBLEM

On April 19, 1999, the Team Leader of the Chemical Weapons Improved Response Team (CWIRT), U.S. Army Soldier and Biological Chemical Command sent a letter to EPA raising issues concerning first responders' liability during a weapons of mass destruction (WMD) terrorist incident. Specifically, the CWIRT asked about the first responders' liability for spreading contamination while attempting to save lives.

Environmental liability resulting from critical lifesaving actions may seem unlikely, but could be a serious concern for many first responders. The question is: Can emergency responders undertake necessary emergency actions in order to save-lives in dire situations without fear of environmental liability even when such emergency actions have unavoidable adverse environmental impacts? This concern is not limited to WMD terrorist incidents, it has broad implications for our National Response System (NRS) and frequently is discussed in the hazardous materials response community.

THE NERVE AGENT DRILL

The federal government recently sponsored a multi-agency drill based on a simulated nerve-agent attack. The release of the nerve agent resulted in hundreds of simulated casualties who survived the initial terrorist attack. The hazmat team had to rescue and decontaminate these "survivors" before they could receive medical attention. The hazmat team identified the need to collect the water used to decontaminate the victims (deconwater) to avoid a release to the environment. During the drill, these very capable, well-equipped, well-intentioned, professional hazmat teams delayed their initial entry for more than one hour, awaiting the arrival and set-up of pools to collect the deconwater. While the actor-survivors were dying a slow, painful, convulsive death, state and federal officials were debating and insisting that deconwater had to be collected for proper disposal. By the time the rescuers set up the holding pools and entered the site, nearly 90 minutes later, the "survivors"

had expired. The contaminated water was collected but the "victims" died.

GOOD SAMARITAN PROVISIONS

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section § 107 (d) Rendering Care or Advice, addresses this issue. Section 107 (d) (1), often known as the "good Samaritan" provision states: "No person shall be liable under this sub chapter for costs or damages as a result of actions taken or omitted in the course of rendering care, assistance, or advice in accordance with the National Contingency Plan (NCP) or at the direction of an on-scene coordinator appointed under such plan, with respect to an incident creating a danger to public health or welfare or the environment as a result of any releases of a hazardous substance or the threat thereof." This provision does not preclude liability for costs or damages as a result of negligence. Releases of chemical and biological warfare agents due to a terrorist incident are considered hazardous materials incidents and therefore CERCLA §107 (d) (1) could apply, to the extent that there is a release or threatened release of a hazardous substance.

In addition, §107(d)(2) provides that state and local governments are not liable under CERCLA "as a result of actions taken in response to an emergency created by the release or threatened release of a hazardous substance generated by or from a facility owned by another person." Section 107(d)(2) would insulate state and local governments from potential CERCLA liability arising from first responder actions. **However, the provision does not apply to costs or damages caused by "gross negligence or intentional misconduct by the state or local government."**

During a hazardous materials incident (including a chemical/biological agent terrorist event), first responders should undertake any necessary emergency actions to save lives and protect the public and themselves. **Once any imminent threats to human health and live are addressed, first responders should immediately take all reasonable efforts to contain the contamination and avoid or mitigate environmental consequences.** EPA will not pursue enforcement actions against state and local responders for the environmental consequences of necessary and appropriate emergency response actions. First responders would not be protected under CERCLA from intentional contamination such as washing hazardous materials down the storm-sewer during a response action as an alternative to costly and problematic disposal or in order to avoid extra-effort**.**

OTHER LIABILITY ISSUES AND STATE TORT LAWS

EPA cannot prevent a private person from filing suit under CERCLA. However, first responders can use CERCLA's Good Samaritan provision as defenses to such an action. First responders could also be subject to actions under other laws, including state tort laws. A state's tort law allows individuals and businesses to seek compensation for losses or harm caused by another. The extent of tort liability of a state or local governmental jurisdiction, as well as individual employees or representatives of that jurisdiction, is established by the tort law of each state. The liability of governmental jurisdictions and their employees may be shaped by factors such as negligence, statutory and discretionary immunity, etc. **First responders should consult legal counsel in their state to discuss authority, status as an agent of the state, immunities, and indemnification.**

FEDERAL SUPPORT DURING A WMD INCIDENT

Contaminated runoff should be avoided whenever possible, but should not impede necessary and appropriate actions to protect human life and health. **Once the victims are removed and safe from further harm and the site is secured and stable, the first responders *should be doing everything reasonable to prevent further migration of contamination into the environment*.**

First responders should involve state and federal officials as soon as possible to reduce potential liability concerns. Under CERCLA, the Federal On-Scene Coordinator (FOSC) can determine which environmental regulations are applicable (or relevant and appropriate) to any removal response and may further determine that any such environmental regulation is impracticable to achieve depending on the exigencies of the situation. If the FOSC determines that it is impracticable to comply with any particular environmental regulation, then the responders (local, state, Federal or responsible party) do not have to comply with that particular environmental regulation. **By involving FOSC, first responders can substantially reduce their potential liability.**

In addition, FOSCs have an expanse of resources under the NRS to support state and local responders in determining a solution which best addresses protectiveness of human health and the environment. Under the NRC, the FOSC can provide invaluable assistance in determining clean-up and decontamination needs, health criteria and appropriate clean-up protocols as needed. FOSC support is even more critical in the aftermath of a WMD terrorist attack when critical post-emergency actions such as agent identification, crime scene sampling, crime scene preservation, and long-term risk evaluation are also being conducted.

PRE-PLANNING IS KEY!

It may not be technically feasible to contain all the runoff resulting from a WMD incident, but emergency responders may be able to reduce its impact to the environment by pre-planning. Responders can maximize local resources by using existing response mechanisms as much as possible. Local Emergency Planning Committees (LEPCs) are a good starting point. LEPCs are established under the Emergency Planning and Community Right-to-Know Act to develop local governments' emergency response and preparedness capabilities through better coordination and planning, especially within the local community. LEPCs include elected officials, police, fire, civil defense, public health professionals, environmental, hospital and transportation officials, who can work together creatively using available resources to minimize the environmental impact of WMD incidents.

For More Information.....

Contact the Emergency Planning and Community Right-to-Know Hotline

(800) 424-9346 or (703) 412-9810
TDD (800)553-7672

Monday -Friday, 9 AM to 6 PM, EASTERN TIME

Visit the **CEPPO Home Page on the World Wide Web at: http://www.epa.gov.ceppo/**

CWIRP Playbook

Part IX – Bibliography

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NOTE: All SBCCOM reports can be downloaded from their Web site at http://hld.sbccom.army.mil.

Part X – Acronyms

AAR	After-Action Report
ACF	Alternate Care Facility
ACGIH	American Conference of Government Industrial Hygienists
ALS	Advanced Life Support
APR	Air Purifying Respirator
ARES	Amateur Radio Emergency Services
BAL	British Anti-Lewisite (dimercaporal)
BALTEX	Baltimore Exercise
BATF	Bureau of Alcohol, Tobacco, and Firearms
BDC	Bomb Data Center (FBI)
BLS	Basic Life Support
BWTTX	Biological Weapons Tabletop Exercise
C	Celsius/Centigrade
CAD	Computer-Aided Dispatch
CAM	Chemical Agent Monitor
CANA	Convulsant Antidote for Nerve Agent (diazepam)
C/B	Chemical and/or Biological
CBIRF	Chemical Biological Incident Response Force (USMC)
C/E	Controller and Evaluator
CISD	Critical Incident Stress Debriefing
CISM	Critical Incident Stress Management
CNS	Central Nervous System
CO	Carbon Monoxide
CW	Chemical Warfare
CWA	Chemical Warfare Agent
CWFX	Chemical Weapons Functional Exercise
CWIRP	Chemical Weapons Improved Response Program
CWTTX	Chemical Weapons Tabletop Exercise
CX	Phosgene Oxime (blister agent)
DA	Department of the Army
DEQ	Department of Environmental Quality
DEST	Domestic Emergency Support Team
DMAP	4-dimethylaminophenol-hydrochloride
DMAT	Disaster Medical Assistance Team (USPHS)
DMORT	Disaster Mortuary Operational Response Team (USPHS)
DoD	Department of Defense
DOE	Department of Energy
DOH	Department of Health
DOJ	Department of Justice
DPP	Domestic Preparedness Program

DPW	Department of Public Works
DS2	Decontamination solution number two (a corrosive decontamination solution)
EAP	Employee Assistance Program
ECC	Exercise Control Cell
ECG	Exercise Control Group
ED	Emergency Department
EEG	Electroencephalogram
EKG	Electrocardiogram
EMRC	Emergency Medical Response Communications
EMS	Emergency Medical Services
EMSA	Emergency Medical Services Agency
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
EOD	Explosive Ordnance Disposal
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPT	Exercise Planning Team
ERT	Emergency Response Team
ERV	Emergency Response Vehicle
EXPLAN	Exercise Plan
F	Fahrenheit
FAC	Family Assistance Center
FBI	Federal Bureau of Investigation
FD	Fire Department
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FFPE	Fire Fighter Protective Ensemble
FRP	Federal Response Plan
FSL	Federal, State, and Local
GA	Tabun (a nerve agent)
G-agent	A nerve agent
GB	Sarin (a nerve agent)
GD	Soman (a nerve agent)
GF	A nerve agent
Gm	Gram(s)
H	European countries' term for HD (sulfur mustard)
HazMat	Hazardous Materials
HD	Sulfur mustard
HEICS	Hospital Emergency Incident Command System
HHS	Health and Human Services
HL	Type of HN (mustard)

HMRU	Hazardous Materials Response Unit (FBI)
HN1, 2, 3	Type of HN (mustard)
IAW	In Accordance With
IC	Incident Commander
ICAM	Improved Chemical Agent Monitor
ICM	Incident Command Management
ICS	Incident Command System
ICU	Intensive Care Unit
IED	Improvised Explosive Device
IM	Intra-Muscular
IRP	Improved Response Program
IV	Intravenous
JCAHO	Joint Commission Association of Hospital Organizations
JIC	Joint Information Center
JOC	Joint Operations Center
L	Lewisite (a blister agent)
MAC	Medical Alert Center
MATF	Multi-Agency Task Force
MCI	Mass-Casualty Incident
ME	Medical Examiner
MEDEX	Medical Exercise
MERC	Medical Emergency Resource Center
MFM	Mass-Fatality Management
MG/mg	Magnesium; milligram(s)
MMRS	Metropolitan Medical Response System
MMRT	Metropolitan Medical Response Team
MOPP	Mission-Oriented Protective Posture
MSDS	Material Safety Data Sheet
MSEL	Master Scenario Events List
NAAK	Nerve Agent Antidote Kit (MARK I) containing atropine and 2-PAM CL
NBC	Nuclear, Biological, and/or Chemical
NDMS	National Disaster Medical System
NDPO	National Domestic Preparedness Office
NFPA	National Fire Protection Association
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute for Occupational Safety and Health
NLD	Nunn-Lugar-Domenici
NMRT	National Medical Response Team (USPHS)

OEM	Office of Emergency Management
OSHA	Occupational Safety and Health Administration
OST^3C	Off-Site Triage, Treatment, and Transport Center
PAO	Public Affairs Officer
PAPR	Powered Air Purifying Respirator
PAT	Personal Accountability Tag
PCC	Poison Control Center
PDD	Presidential Decision Directive
PIO	Public Information Officer
POC	Point of Contact
PPE	Personal Protective Equipment
RSP	Render-Safe Procedures
RTF	Response Task Force
SABA	Supplied Air Breathing Apparatus
SAC	Special Agent-in-Charge (FBI)
SARA	Superfund Amendments and Reauthorization Act
SBCCOM	Soldier and Biological Chemical Command (U.S. Army)
SCBA	Self-Contained Breathing Apparatus
SEL	Selective Equipment List
SOP	Standard Operating Procedure
START	Simple Triage and Rapid Treatment
2 Pam Cl	Pralidoxime chloride
TBD	To Be Determined
TEU	Technical Escort Unit (U.S. Army)
UCS	Unified Command System
USAMRICD	U.S. Army Medical Research Institute of Chemical Defense
USPHS	U.S. Public Health Service
V-agent	A nerve agent (in some countries V-agents are known as A-agents)
VX	O-ethyl methyl phosphonothiolate (a V-agent)
WMD	Weapon(s) of Mass Destruction
WMDOU	Weapons of Mass Destruction Operations Unit (FBI)

ANNEX A

Guidelines for Responding to a Chemical Weapons Incident

ANNEX A

Preface

This **"Guidelines for Responding to a Chemical Weapons Incident"** document has been developed by the Domestic Preparedness Program (DPP). Through the U.S. Army Soldier and Biological Chemical Command (SBCCOM), Chemical Weapons Improved Response Program (CWIRP), members of the Law Enforcement, Health and Safety, and the Emergency Response Functional Groups designed these guidelines with the intent to give assistance to all response personnel in dealing with critical incident management decisions consistent with an actual chemical weapons (CW) emergency response.

These guidelines are neither mandated nor required procedures for response to the scene of a chemical terrorism incident. Rather, they are presented to provide technical and operational guidance for those agencies wishing to improve their response and related operations should a CW incident occur in their community. The focus of these guidelines was to validate the procedures and recommendations developed through the series of emergency response technical reports that have already been published by the CWIRP. That validation process was conducted via a forum consisting of representatives from the fire, Emergency Medical Services (EMS), police, and health and safety communities.

We encourage all agencies and jurisdictions to review the data, understand the implementations, and determine if your agency and jurisdiction will use these guidelines as part of your decision-making process during a CW incident. Once you have made the decision that is best for your community, you should establish plans, policies, and training for your personnel in all aspects against the threat of a CW attack.

ANNEX A

9-1-1 Operators

The 9-1-1 Communications Center presents the first opportunity to identify that a potential chemical incident exists. A chemical terrorist attack will most likely yield an abundance of calls for assistance. Through close scrutiny of the information provided and rapid cross-checking of the numerous reports, a well-trained operator should be alerted to the possibility that the incident is not routine in nature. Identifying the incident and relaying this potential threat information and precautionary measures to **all** of the responding units may be the key to saving the lives of many of the first responders on the scene.

Indicators of a Possible Chemical Weapons Incident

- Explosion with little or no structural damage
- Reports of a device that dispersed a mist or vapor
- Multiple casualties exhibiting similar symptoms
- Mass casualties with no apparent reason or trauma
- Reports of unusual odors, liquids, spray devices, or cylinders
- Dead animals
- Discarded personal protective equipment (PPE)

Questions for the Caller

- What is your name and address and the phone number you are calling from?
- What is the location of the incident?
- Was there a fire or explosion?
- Did you hear any hissing or spraying?
- Was there any mist or liquid dispersed?
- Is anyone injured or sick?
  - How many?
  - What are their symptoms and complaints?
- Is the incident inside or outside of a building?
- What is the type of structure where the incident occurred?
- Did you see anyone or anything suspicious?
- Did you see anyone wearing protective clothing (e.g., mask, gloves, chemical suits)?
- Can you describe the perpetrator or a getaway vehicle?

ANNEX A

Dispatch Notifications

Dispatch

- Fire
- Police and shift supervisor
- Emergency Medical Services (EMS)
- Hazardous materials (HazMat)

Update Responding Units

- Provide responding units of any new information
- Provide special response routes of travel (upwind/upgrade)
- Provide special instructions or precautions (e.g., use of PPE, report to staging areas)
- Provide weather updates, wind direction, and speed
- Provide any description of perpetrators and getaway vehicles (e.g., warn of potential contamination, additional devices on perpetrators)
- Provide number of victims, their signs, and symptoms

Notifications

- Local Federal Bureau of Investigation (FBI) office – weapons of mass destruction (WMD) coordinator
- Office of Emergency Management (OEM)
- Local health department; give information
  - Agent information
  - Patient signs and symptoms
  - Number of casualties
  - Request that hospitals, clinics, and healthcare facilities be notified
  - Consider establishment of off-site treatment center
- Local Environmental Protection Agency (EPA)
- Department of Public Works and Highways

ANNEX A

Actions on Arrival

Whether prewarned of a potential chemical incident or by recognizing it on arrival at the incident scene, responders should take several immediate steps to protect themselves. With proper precautions and protective equipment, responders are able to effectively perform rescue operations and scene management safely.

- Approach upwind and upgrade of the incident
- Stop at a distance and collect information
  - General guidelines for initial hazard distances are contained in the North American Emergency Response Guidebook
- Alert dispatch to inform follow-on responders
- Direct all personnel to use full PPE and self-contained breathing apparatus (SCBA)
  - At a minimum, respiratory protection
- Be aware of possible secondary devices
- Consider that the perpetrator may still be on the scene
- This is a crime scene
  - Restrict entry
  - Preserve evidence
- Avoid contact with liquids
- Relay to dispatch the status of the incident and request additional resources as needed
  - HazMat, EMS, rescue, police, bomb squad, mutual aid, and other resources

ANNEX A

Fire Department

On arrival, fire department units will immediately be faced with mass casualties (e.g., trauma, chemically contaminated, and psychosomatic) as well as major scene and command and control challenges. The fire response and Incident Command System (ICS) will be severely tested by the magnitude of the incident. Rapid employment of the elements of a chemical incident response is essential to protect life.

- Establish Incident Command
- Establish communications
- Secure, isolate, and deny entry to area
- Establish safety zones
- Establish water supply, hose lines, and suppression duties
- Identify if live victims remain in the area of attack
- Rescue live victims
- Establish casualty collection points (CCPs)
- Perform mass decontamination, triage, and treatment of victims
- Monitor and maintain water runoff

ANNEX A

Incident Command

The decisions that the Incident Commander (IC) makes during the first 10 to 15 minutes of the response are the key to both protecting responders and saving lives of the victims of the attack. The ability to recognize critical needs and prioritize the limited resources available to perform them requires a thorough knowledge of chemical incident response procedures and the threats and dangers of the potential agents. It is also critical to the safety of everyone on the incident and overall success of the incident response that all agencies operate as a Unified Command, not a series of individual agency command posts.

- Establish command post upwind and upgrade away from direct involvement with victims, responders, or emergency response vehicles
- Give detailed situation report of:
  - Estimated number of casualties
  - Location of hot, warm, and cold zones
  - Recommendations for PPE

The IC evaluates the chemical threat, potential to save lives, risk to responders, and time constraints to achieve each level of responder protection before determining what level of PPE to use to perform rescue operations.

- Request additional resources immediately
- Establish a dedicated radio channel or direct telephone line with the Emergency Dispatch and Communications Center
- Consider the threat of secondary devices
- Establish a decontamination area for civilian victims and another for technical decontamination of responders. This area should also handle decontamination of responder equipment, and evidence.
- Request communications and dispatch to notify hospitals of mass casualties and the possibility of contaminated victims who have left the scene showing up at their facilities
- Establish accountability of all responders on scene
- Request that a supervisor or senior ranking law enforcement officer report to the command post
- Alert all personnel that the incident is a crime scene and to use caution to preserve suspected evidence, if possible
- Coordinate rescue operations with law enforcement
- Ensure law enforcement advises on activities being conducted in the immediate area:

ANNEX A

- Search for secondary devices
- Evaluate and perform render-safe procedures (RSPs) on devices
- Investigation requirements

ANNEX A

Fire Department Sector Assignments

- Safety
- EMS and triage
- Water
- HazMat
- Public Information Officer (PIO)
- Decontamination
- Accountability
- Rehabilitation
- Staging
- Operations
- Police liaison

ANNEX A

Casualty Rescue

The threat of cross-contamination of victims through contact with liquid agent or residue continues even after the initial agent release. The rapid removal of casualties from the contamination, triage, and decontamination areas is essential to reducing additional agent-related injuries. ICs must make rapid decisions on casualty rescue based on protective equipment available and an evaluation of the contamination threat. As many ambulatory casualties as possible should be removed from the area without rescuers entering the incident site. It should be expected, though, that live, nonambulatory casualties will be present at any chemical incident.

Additional information on guidelines for rescue operations may be found in the "Risk Assessment of Using Firefighter Protective Ensemble with Self-Contained Breathing Apparatus for Rescue Operations During a Terrorist Chemical Agent Incident." A copy of this report can be obtained at the following Web site: hld.sbccom.army.mil.

- Use bull horns and vehicle public address (PA) system to give directions
- Be alert for secondary devices
- Establish communications with command post
- Determine if there are live victims in the contaminated area
- Use PPE options for rescue:
  - Level-A HazMat suit with SCBA
  - Firefighter turnout gear with SCBA
- Decide to rescue or wait for HazMat to arrive
- Notify command post, emergency management, and health department with estimated number of victims
- **Avoid contact with liquids**

Responders need to be aware that the closer they are to the point of dissemination of the agent the more likely they are to expose themselves to liquid contamination. Additionally, responders should avoid contact with any deceased based on the threat of liquid contamination.

- Assist and direct all victims to decontamination and triage area

ANNEX A

Decontamination

For decontamination to be beneficial to the exposed victims of a chemical incident, it must be performed within minutes of the agent exposure; however, decontamination after the initial exposure is necessary to reduce the possibility of agents on the clothing or skin. This is essential to protect responders and other victims from cross-contamination. Studies have been done looking at the advantages of using soaps, detergents, and bleach in the decontamination process; however, the only decontaminant expected to be immediately available to the first responder is water. The theories and procedures referred to by the Chemical Weapons Improved Response Program (CWIRP) are based on decontaminating victims using large volumes of water.

Additional information may be found in the ***"Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident."*** *A copy of this report can be obtained at the SBCCOM Web site: http://hld.sbccom.army.mil.*

- Establish decontamination locations upwind and upgrade of the incident
- Decontamination corridors are established as the passage between the Warm and Cold Zones. As such personnel operating on the Warm Zone or contaminated side of the decontamination corridor must wear PPE/SCBA
  - Firefighters recommended turnout gear with SCBA
  - EMS recommended turnout gear with SCBA or Level C
  - Police recommended Level C

Level C protection recommended for decontamination consists of full-face, negative pressure respirator with Chemical Warfare Agent (CWA) filters, full body chemical protection suit (e.g., Tyvek or similar [not charcoal lined] military style due to potential to exposure to water) with integral hood and foot covers, butyl rubber gloves, and overboots.

- Be alert for secondary devices, weapons, and perpetrators
- Request police for security of personnel, victims, personal property, and collection and preservation of evidence
- Avoid contact with unknown liquids
- Decontaminate **(immediately)** casualties with liquid contamination on their skin or clothing
- Clothing removal is decontamination. Encourage victims to remove clothing at least down to their undergarments
  - Bag and tag personal belongings
- Prioritize asymptomatic, symptomatic, and nonambulatory casualties

- Coordinate decontamination with EMS triage activities
- Establish separate technical decontamination for responders away from mass-casualty decontamination

Concerns of Mass Decontamination

- Requires large volumes of water
- Containment of contaminated water runoff
  - Saving lives takes priority
  - Attempts to control runoff and environmental damage should be made as control of the situation is gained
  - Notify health department and EPA
- Weather and wind conditions
- Decontamination corridors are ideal targets for secondary devices
- Perpetrators may be among victims
- Victim identification and tracking
- Prioritization for decontamination based on medical conditions and likelihood of contamination
- Factors that determine the highest priority for ambulatory victim decontamination
  - Casualties closest to the point of release
  - Casualties reporting exposure to vapor or aerosol
  - Casualties with evidence of liquid deposition on clothing or skin
  - Casualties with serious medical symptoms (shortness of breath, chest tightness etc.)
  - Casualties with conventional injuries
- Security of personal property and clothing
- Security of sensitive equipment (e.g., police officers' weapons)
- Separation of male and female victims
- Determine method of water application
  - Must provide large quantity of water
  - Handheld hose lines
  - Aerial towers
  - Ladder Pipe Decontamination System (LDS)
  - Emergency Decontamination Corridor System (EDCS)

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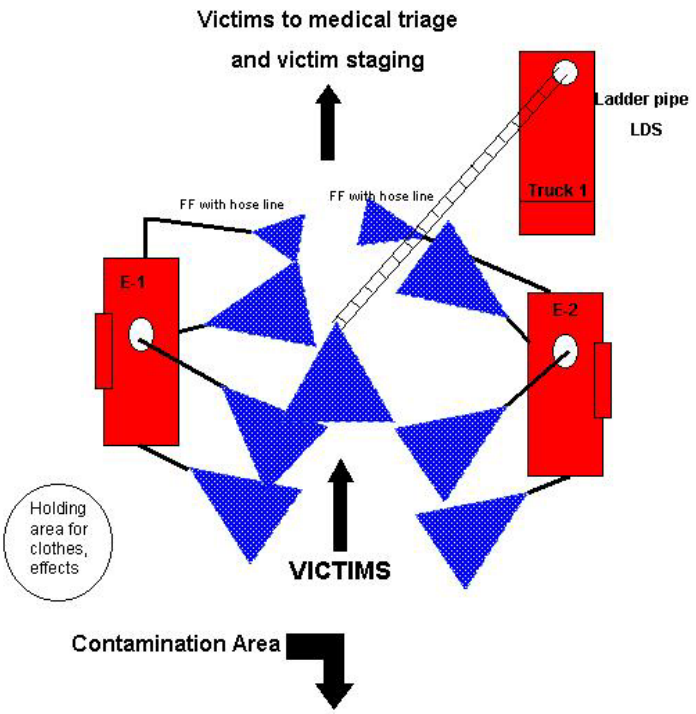
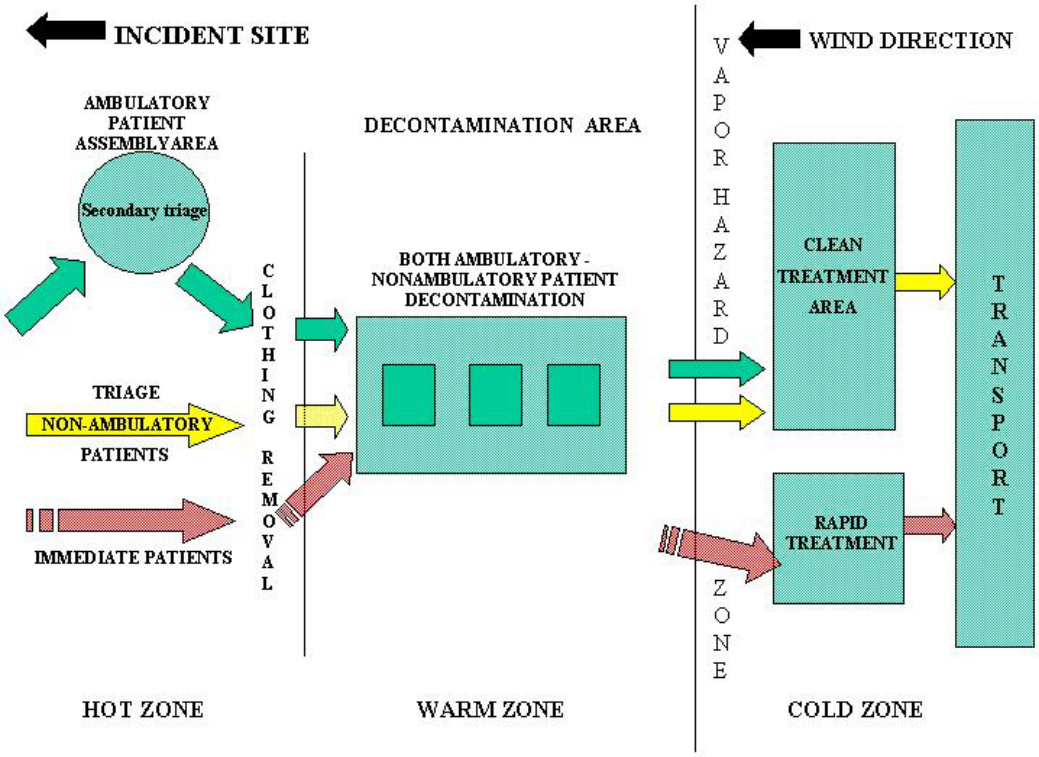


Ladder Pipe Decontamination System



Emergency Decontamination Corridor System

ANNEX A

Types of Decontamination

- Passive (clothing removal)
- Dry agents
  - Dirt
  - Baking powder
  - Charcoal
  - Flour
  - Sawdust
  - Silica gel
- Wet agents
  - Soap and water
  - Water (only)
  - Bleach (equipment decontamination)
- Air decontamination (positive pressure ventilation [PPV]/portable fans)

Decontamination Resource Needs

- Engine companies to establish, maintain, and apply water
- Truck companies for ladder pipe and ventilation duties
- Ambulances and EMS personnel for treatment and transport of victims after decontamination
- Police for security and control
- Tracking of victims and personal property
- Dry clothing and blankets
- Department of Public Works (DPW) and highways for traffic control devices, sand bags, and equipment
- Alternate transportation methods for victims
  - Only casualties who have undergone gross decontamination on site
  - Mass transit vehicles used
  - Triage green only
  - Transport to alternative care facility (ACF)
  - Medical personnel to accompany each transport
  - Drivers with Level C PPE

Level C PPE recommended for transport drivers consists of full-face, negative pressure respirator, full body chemical suit (Tyvek or charcoal lined), chemical and/or biological protective gloves

- Relief crews for all emergency personnel

ANNEX A

Technical Decontamination

Technical decontamination refers to the detailed decontamination (e.g., wash, rinse, underlying procedures) used by specialized teams, most notably HazMat. It is recommended that at least one technical decontamination area be set up to support the special response teams that operate in the hot and warm zones. This includes law enforcement response and investigative teams.

- Established separate from victim decontamination
- Provide decontamination operations in support of
  - Firefighters
  - EMS providers
  - HazMat technicians
  - Bomb squad
  - Law enforcement
  - Civilian workers
- Be prepared to provide decontamination support during recovery operations to include decontamination of
  - Evidence
  - Equipment
  - Vehicles

The establishment of technical decontamination stations can become both a confusing and space absorbing process. Many organizations with technical decontamination capabilities insist on using their own decontamination assets rather than using already established technical decontamination corridors manned by local HazMat responders. The IC should be aware of this and plan accordingly. As multiple mutual-aid and state and federal response teams converge on the incident scene, technical decontamination can become a space use nightmare. Best practices involve use of personnel and specialized equipment from responding agencies on an already established technical decontamination corridor.

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HazMat Team

Missions performed by HazMat teams on a chemical incident will predominantly be the same as a normal HazMat response. However a deliberate chemical attack will most likely yield many more casualties, occur in a densely populated area or a large gathering, and be a criminal act. HazMat operations must be closely coordinated with law enforcement.

- Approach upwind and upgrade of the incident
- Wear Level A HazMat PPE/SCBA
- Identify the chemical agent using detection equipment and patient symptoms
- Collect samples for laboratory analysis
- Avoid contact with liquids
- Be alert for secondary devices
- Consider perpetrator may still be on scene
- Establish
  - Communications with command post
  - Safety, hot, warm, and cold zones
  - Casualty holding area
  - Technical decontamination for responders, evidence, equipment, and apparatus
- Provide area monitoring during response operations
- Provide equipment monitoring during recovery operations

ANNEX A

Emergency Medical Services

The greatest challenges facing EMS on a chemical incident will be the number of actual casualties (e.g., trauma and agent exposure)—segregating these casualties from nonexposed victims and performing triage and possibly minor medical intervention while in a contaminated environment.

Determine proper level of PPE and respiratory protection needed for EMS personnel in their assigned work area.

PPE recommended for EMS operating in warm zone consists of either turnout gear with SCBA or Level C consisting of Tyvek style overgarment with hood and foot cover, full-face, negative pressure respirator, butyl rubber gloves, and overboots. PPE for operating in cold zone is Level C, as described above.

- Be alert for secondary devices and perpetrators
- Avoid contact with liquids
- Rapid prioritization of number of patients
- Triage victims based on medical necessity
  - Mass-casualty incident (MCI) protocols
  - Simple Triage and Rapid Treatment (START) system

The CWIRP *Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident* report outlines a mass casualty decontamination algorithm for incorporating both medical and contamination prioritization.

  - Segregate victims and coordinate decontamination prioritization with fire department and HazMat based on:
    - Triage categorization
    - Likelihood of agent exposure
- Establish patient identification and tracking
- Collect victim personal property
- Tag personal property and turn it over to law enforcement for security
- Establish
  - Communications with command post and hospitals
  - Staging for EMS personnel, ambulances, supplies, and resources
  - Transportation area
  - Casualty Collection Point

- Direct walking wounded to a designated on-site CCP
- Transport yellow and red-tagged triage patients to medical treatment facility using emergency medical transports
- Transport green-tagged triage patients to ACF using mass transit assets

ANNEX A

Patient Segregation

Unlike most MCIs, victims of a chemical incident need to be evaluated not just on their medical condition (standard MCI triage protocols), but their likelihood of contamination must be considered in determining priority for decontamination.

- Ambulatory casualties: Able to understand directions, talk, and walk unassisted
- Nonambulatory casualties: are unconscious, unresponsive, or unable to move unassisted
- All patients need to be tracked by identification and documentation and be tagged or marked prior to decontamination

Decontamination Prioritization

- Casualties closest to the point of release
- Casualties with reported exposure to vapor or spray
- Casualties with liquid agent contamination to clothing or skin
- Casualties with serious medical symptoms (e.g., shortness of breath and chest tightness)
- Casualties with conventional injuries
- Casualties with no visible signs or symptoms of agent exposure and no conventional injuries

Decontamination for final category is more for psychological than medical reasons.

Additional information may be found in the ***"Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident."*** *A copy of this report can be obtained at the following Web site: hld.sbccom.army.mil.*

ANNEX A

Hospital Operations

Community medical systems are faced with managing two principal populations when responding to a chemical incident: those transported from the incident scene and those who self-refer. In the case of the Tokyo subway sarin attack, the majority of the people seeking medical attention self-referred. Timely notification of the incident and subsequent updates on the suspected and known agent as well as treatment protocols are essential to hospital safety and patient care.

- Once alerted, hospitals should notify
  - Staff
  - Doctors
  - Nurses
  - Security
  - Emergency department (ED)
  - Maintenance department
- Estimate number of casualties
- Identify any self-referrals that may be from the incident
- Establish decontamination procedures for walk in-patients using hospital personnel
- Obtain suspected agent information and treatment protocols from the IC, health department, CDC, poison control etc.
- Caution hospital staff to use protective measures

PPE recommended for hospital personnel performing decontamination operations and casualty care and triage prior to decontamination should be Level C protection consisting of tyvek type suit with integrated hood (not charcoal lined suits) and foot covers, full-face, negative pressure respirator, butyl rubber gloves, and overboots.

Casualty Processing

- Patient identification and tracking
- Observe/report victim symptoms of agent exposure
- Patient transport
- Determine if number of casualties exceeds the capabilities of existing healthcare systems
  - Off-Site Triage, Treatment, and transportation Center (OST^3C) needs to be established
- Identify needs for long-term patient tracking
- Establish critical incident stress debriefing (CISD) team for victims

ANNEX A

Hospital Actions

- Lock down the hospital to avoid contamination and subsequent hospital shutdown
- Establish single entry and egress point
- Establish incident command system
- Establish and maintain communications with the health department and Emergency Operations Center (EOC)
  - Share casualty information
  - Mitigate effects of the incident
  - Exchange update information
- Establish a triage area outside of the facility
- Provide a decontamination station outside the facility with fire hose/stand pipe
- Integrate local EMS tag and triage system into the hospital method for catastrophic care
- Wear the appropriate level of PPE
- Identify accurate bed availability
- Use preestablished medical treatment protocols for chemical agents
- Initiate patient evacuation plans; relocate patients to other areas inside the hospital or to other rehabilitation hospitals

ANNEX A

Off-Site Triage, Treatment, and Transportation Center (OST^{3}C)

There may be a large number of people at a chemical incident who are not exposed to the agent and who will still seek some form of treatment. To allow the existing medical system to provide care for those who need it most, communities should consider establishing an alternative treatment center for the less serious and "worried well" population. An evaluation of the impact of the casualties on the medical system and the decision to open an alternative treatment center should be made between the IC, public health officer, and the emergency manager.

Additional information on guidelines for establishing an OST^{3}C is contained in the CWIRP ***Health and Medical Services*** *Report:* ***"An Alternative Health Care Facility Concept of Operations for The Off-Site Triage, Treatment, and Transportation Center (OST^{3}C)"*** *available on the SBCCOM Web site: http://hld.sbccom.army.mil.*

Activate OST^{3}C

- Determine facility and location
- Appoint staffing
  - Administrative
  - Operational
  - Support
- Identify and obtain equipment, supplies, clothing, and antidote caches
- Establish internal and perimeter security
- Establish warm and cold zones
- Coordinate ambulances and alternate transportation
- Establish a temporary morgue

OST^{3}C Facility Requirements

- Tables, chairs, beds, televisions, PA systems, and chalk and dry erase boards
- Bathrooms
- Cafeteria
- Auditorium and large open room area for briefings
- Locker rooms; showers for males and females
- Parking facilities and large fields
- Good access roads

- Telephones and electricity
- Heat and air-conditioning

OST^{3}C Patient Flow

- Controlled entry point
- Initial triage
- Gross decontamination required (if not decontaminated at the incident site)
- Registration
- Detailed decontamination
- Redress and secondary triage
- Treatment
- Data collection and law enforcement investigation
- Replenishment area and cafeteria
- Victim assistance
- CISD

ANNEX A

Fatality Recovery and Management

Residual contamination and difficulty in verifying that a body is completely decontaminated require special considerations in both body recovery and decisions on returning remains to the family members.

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*Additional information is contained in a report titled **"Guidelines for Mass Fatality Management During a Terrorist Chemical Agent Incident,"** and available on the SBCCOM Web site: http://hld.sbccom.army.mil.*

- Establish communications and coordination between command post, law enforcement, medical examiner (ME), and public health
- Deceased victims are evidence of the crime scene
- Deceased victims remain in place until released by lead law enforcement agency and the ME
- Personnel processing deceased need appropriate PPE based on contamination threat

PPE recommendation for body recovery operations should be made based on results of HazMat monitoring conducted at the incident scene. If law enforcement and ME personnel enter the area prior to HazMat determining the type and concentration of agent, Level A PPE should be worn.

- Be alert for secondary devices and booby traps
- Establish decontamination area for deceased
- Identify, tag, and track deceased and their personal property
- Coordinate with hospitals and other sources where deceased may occur
- Establish a temporary morgue
- Request Disaster Mortuary Operational Response Team (DMORT), clergy, and CISD team
- Prepare information for funeral homes regarding agent and dangers of handling the bodies
- Determine if bodies can be released to families

ANNEX A

Law Enforcement

A chemical weapons attack will pose unique challenges to each level of the law enforcement response. Even though the FBI has jurisdiction over domestic WMD incidents, the initial response falls on the local law enforcement agencies. The size of the initial scene perimeter (due to vapor hazards), operating in personal protective clothing and evaluating and processing a contaminated crime scene are only some of the key challenges facing law enforcement.

- Establish police command
- Establish communications between fire department IC and police commander
- Establish personnel and equipment staging area
- Be alert for secondary devices, weapons, and perpetrators
- Ensure appropriate PPE is worn based on mission, hazard zone of operation, and the likelihood of contamination

*** PPE recommended for law enforcement officers operating on the perimeter of a chemical incident consists of Level C, Tyvek type, or charcoal lined full body chemical suit, full-face negative pressure respirator, overboots, and butyl gloves with police gear worn over the chemical protective suit.**

Officers operating in the decontamination corridor should wear the above minus the option of a charcoal lined suit.

- Police commander assigns additional duties for patrols
- Begin investigation

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*Studies regarding PPE recommendations for officers performing duties, such as suspect apprehension, inside the warm zone are published as part of a comprehensive law enforcement PPE report, "**Guidelines for Use of Personal Protective Equipment by Law Enforcement Personnel During a Terrorist Chemical Warfare Agents Incident**". This report is available at the SBCCOM Web site: http://hld.sbccom.army.mil.*

Identification of law enforcement officers in PPE is an issue of concern. Using vests and writing department names on suit with markers can be readily duplicated by perpetrators seeking to gain access to, or escape from, the incident scene. Careful consideration must be given to officer identification in PPE.

ANNEX A

Law Enforcement Roles

Basically, the roles that law enforcement will perform on a chemical incident are the same as for any crime scene. However, due to the nature of the event, level of training, availability of protective equipment, and special equipment requirements, local departments may not be able to perform several tasks. It is imperative that officers always operate within their level of training and protective equipment when dealing with a chemical incident, response, and investigation.

- Traffic and crowd control outer perimeter
- Crowd control in decontamination area
- Security
  - Site access
  - Responders and victims
  - Victims' personal belongings
  - Law enforcement sensitive equipment
  - Evidence
  - Critical off-site facilities
    - OST^3C
    - Locations/gatherings with links to an identified theme of initial attack
- Crime scene processing
- Evidence collection and decontamination
- Witness interviews
- Multiagency communications
- Suspect detention
- Long-term site security

ANNEX A

Patrol

The first key element to a successful response to a chemical incident and to providing for officers' safety is rapid identification of the hazard and immediately gaining control over the responding units. The normal tendency to rush onto the scene to assist victims must be controlled. It is possible that officers on scene at the time of an attack, or the first arriving officers, could become casualties. A call to assist an officer in distress must be handled differently in a chemical incident or a large part of the immediate response force may be lost.

Additional information is available in the ***"Guidelines for Use of Personal Protective Equipment by Law Enforcement Personnel During a Terrorist Chemical Warfare Agents Incident."*** *This report is available on the SBCCOM Web site: http://hld.sbccom.army.mil.*

- Senior officer will assume on-scene command
- Notify command and responding units of situation
- Designate areas for responding patrols to report to staging area
  - Verify levels of PPE before responding to scene
- Establish liaison with Incident Command and command post
- Identify manpower requirements
- Establish scene control
- Control additional responding units
- Get advice from fire department on contaminated zones, safe zones, and PPE requirements
- Do not enter the contaminated area

ANNEX A

Bomb Squad

Bomb technicians routinely operate in a highly dangerous environment with sophisticated equipment; however, none of this standard equipment provides protection from chemical agent hazards. Protective suits and specialized equipment for bomb technicians are limited; however, a chemical incident is likely to require them to operate in a contaminated environment and dispose of devices that may contain chemical agents. Police and fire commanders, bomb squads, and HazMat teams need to work together to formulate and rehearse plans for dealing with these types of problems.

- Establish communications with fire command, HazMat, and police command
  - Ensure actions are coordinated with each level of command
- Establish bomb squad staging area equipment/vehicles
- Identify appropriate PPE needed for agent hazard
  - Reconnaissance may be conducted in chemical or biological (C/B) protective clothing only
    - In areas where HazMat has not been determined, agent type and concentration Level A protection (fully encapsulating suit and SCBA) is warranted
    - If HazMat has identified agent and concentration, coordinate PPE levels with them
    - At a minimum, Level C PPE should be worn
- Have fire and HazMat teams establish technical decontamination area for personnel, evidence, and equipment
- Be alert for perpetrators who may still be on the scene
- Request Special Weapons and Tactics (SWAT) team (as needed) to secure perimeters
- Conduct search, disarmament, and detonation of suspected devices

ANNEX A

Special Weapons and Tactics Team

SWAT teams represent the law enforcement agency with the most training and diversity, operating in various specialized equipment under a variety of circumstances. As such, they are the most probable unit to perform specialized operations at a chemical incident, including operations inside the contaminated zones. Mission necessity, equipment, and training must always be considered prior to committing a team for operations in a contaminated environment.

- Establish communications with IC and police command
- Assist with security
- Establish a staging area for equipment
- Be alert for secondary devices
- Suspect detention and apprehension
- Coordinate for decontamination support if conducting mission inside warm and hot zones

ANNEX A

Intelligence

Prior to the occurrence of a chemical incident, intelligence networks should be established between local, state, and federal agencies, including adjoining departments. WMD should become a standard element of their information gathering and intelligence sharing.

- Identify possible "theme" for attack
- Identify group(s) that may be responsible for attack
- Identify related events and other possible targets
- Determine if threat warrants notification and security for other related targets
- Conduct regional notifications of incident

ANNEX A

Investigation

It can be expected that a deliberate chemical attack will be directed at a high-profile event involving a large number of people. As such, the number of potential witnesses can be in the hundreds or thousands. Identifying and locating everyone from the scene will be an enormous task for investigators.

- Witness interviews
- Suspect interrogations
- Identify locations where witnesses have been taken
  - Alternative treatment centers
  - Hospitals
- Public announcement to reach witnesses who departed area
- Establish hotline and tip line

ANNEX A

Emergency Management

Not unlike a major natural disaster, a chemical incident will challenge all of the local and regional resources and involve a large state and federal response. Emergency managers are well prepared to deal with those disasters common to their area (e.g., tornados, floods, hurricanes, earthquakes), but a chemical incident presents its own unique challenges.

- Notify local, city, and county officials
- Coordinate with fire department and health department to establish a single point of contact (POC) for public release of information
- Establish Emergency Operations Center (EOC). As operation expands merge into a Joint Operations Center (JOC) and Joint Information Center (JIC)
- Determine if incident exceeds local jurisdiction capabilities
- Notify state Emergency Management Agency (EMA)
- Make available resources, as needed
- Start compiling data for replenishment of losses and reimbursement of funds
- Work with EPA on environmental site cleanup
- Establish hotline for victim information

ANNEX A

On-Scene Communications

- Need spare and replacement radios, batteries, chargers, and supplies
- Mutual-aid radios and frequencies for ability to communicate with multiple agencies and jurisdictions
- Hard wired telephones to relieve use of radios
- Wireless cellular telephones as an alternate to radio overload
- Hard wired or wireless fax machines:
  - Free up airtime use of radios
  - Send and receive information and resource list without being monitored or heard by others
- Vehicle or handheld computers
- Private and business owned two-way radios may be used to relieve overloaded emergency radios
- Message runners in the event of loss of radio communications

ANNEX A

Media

Public Information Officer (PIO)

- Establish a PIO for the incident
- Establish a media staging and briefing area
- Maintain single contact person for release of information
- Schedule regular press releases
- Include key agency representatives in press releases to answer specific questions
- Use media for public service announcements

Pertinent Information for PIO

- Information on chemical agent
- Symptoms
- Number of people affected
- Size of the contaminated area
- Treatment for the agent
- Threat of spreading the contamination
- Directions that people who were not treated at the scene should follow
- Prognosis of the exposed victims
- Any established victim and/or incident hotlines

Media Arrival

- Local, national, and international
  - Radio stations
  - Television stations
  - Newspapers
  - Other news agencies
  - Tabloids

Public Notification

- Establish a single POC

ANNEX A

- Release brief statement of the event
- Request the public not visit the area of the incident scene
- Provide the public information on:
  - Self-decontamination
  - Information on and directions to alternative treatment centers
  - Chronology of the event
  - Public safety information
  - Instructions for the victims
  - Locations that the public needs to avoid
- Give regular media and public updates