Principles of Mass Decontamination

- Removing clothes is the single most critical step in mass decontamination and may remove 80-90% of physical contamination.
- Do not delay removal of clothes or application of a high-volume, low pressure water shower to set up tents, additional equipment or to create a soap-water solution.
- Conduct decontamination triage prior to administering a high-volume, low-pressure water shower
- Wash time should be between 30 seconds and three minutes, depending on the situation
- When the contamination involves chemical vapors, biological or radiological material, using gentle friction, such as rubbing with hands, cloth or sponges is recommended to aid in removal of the contamination
- Rubbing should start with the head and proceed down the body to the feet
- Victim observation area(s) should be utilized to monitor victims for signs of delayed symptoms or evidence of residual contamination
- Perform secondary decontamination as necessary

Guidelines for Mass Casualty Decontamination During a HAZMAT/Weapon of Mass Destruction Incident

Volume I of II

The key to successful mass decontamination is to use the fastest approach that will cause the least harm and do the most good for the majority of the people.

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December 2008
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Table of Contents

1.0 Introduction .................................................................................................................................................. 1
2.0 Background .................................................................................................................................................. 1
3.0 Objective .................................................................................................................................................... 1
4.0 Scope .......................................................................................................................................................... 1
5.0 Guidelines Format ....................................................................................................................................... 2
   5.1 Volume I .................................................................................................................................................. 2
   5.2 Volume II ................................................................................................................................................ 2
6.0 Overview ...................................................................................................................................................... 4
   6.1 Definition of Decontamination ........................................................................................................... 4
   6.2 Purposes of Decontamination ............................................................................................................... 4
7.0 Mass Casualty Decontamination Operation ............................................................................................ 5
   7.1 Step 1: Initial Size-up ............................................................................................................................ 5
   7.2 Step 2: Victim Control and Decontamination Triage ......................................................................... 5
   7.3 Step 3: Decontamination Setup .......................................................................................................... 6
   7.4 Step 4: Mass Decontamination Execution ......................................................................................... 6
   7.5 Step 5: Post Decontamination ........................................................................................................... 7
8.0 Basic All-Hazards Mass Decontamination Approach ........................................................................... 8
   8.1 Clothing Removal ................................................................................................................................. 8
   8.2 Water Shower ....................................................................................................................................... 8
9.0 High-Volume, Low-Pressure Decontamination ...................................................................................... 12
10.0 Cold Weather Guidelines ...................................................................................................................... 14
11.0 Summary ................................................................................................................................................... 16

Appendix A: Quick Reference Guides for Mass Decontamination .................................................................... 17
Appendix B: Glossary ......................................................................................................................................... 31
Appendix C: Acronym List ................................................................................................................................ 32
List of Figures

Figure 5-1. Mass Decontamination Process ...................................................................................................3
Figure 6-1. Off-Gassing Hazard ....................................................................................................................5
Figure 7-1. Step 2: Decontamination Triage .................................................................................................6
Figure 7-2. Oily, Liquid Residue Requiring Secondary Decontamination ....................................................7
Figure 8-1. Proper Removal of Clothing .......................................................................................................8
Figure 8-2. Proper Body Position for Mass Decontamination ...................................................................9
Figure 8-3. Proper Decontamination Corridor Walk-through Technique ....................................................10
Figure 8-4. Decontamination Using Decontamination Corridor Setup ......................................................11
Figure 9-1. Ladder Pipe Decontamination System ...................................................................................12
Figure 10-1. Dry Decontamination .........................................................................................................14
Figure 10-2. Cold Weather Decontamination Guide .................................................................................15
1.0 Introduction

In the recent past terrorist organizations have used different chemical, biological, and radiological (CBR) weapons to pursue their own agendas. In 1995, the Aum Shinrikyo cult released sarin onto the Tokyo subway system, killing 12 and injuring hundreds. In 2001, anthrax spores were sent through the U.S. postal service to U.S. senators, killing five postal employees and infecting 22 more. The increasing complexity and scale of these incidents suggest the possibility of a large scale attack with a Weapon of Mass Destruction (WMD) causing thousands of casualties on U.S. soil. Since these attacks are difficult to prevent and may happen anywhere and at any time, mass decontamination is one of the key elements to managing the consequences of such an event, saving lives, and limiting the number of injuries.

2.0 Background

These Guidelines are an update of the United States Army Soldier and Biological Chemical Command (SBCCOM) - now the United States Army Edgewood Chemical Biological Center (ECBC) - January 2000 Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident and January 2002 Guidelines for Cold Weather Mass Decontamination During a Terrorist Chemical Agent Incident. These Guidelines supersede these original 2000 and 2002 Guidelines and are expanded to include all chemical, biological and radiological hazards. These Guidelines represent the latest evolution in our approach to mass casualty decontamination.

3.0 Objective

These Guidelines were developed for first responders to provide information and suggested procedures for mass casualty decontamination following a hazardous materials (HAZMAT)/WMD attack.

There is no perfect solution to mass casualty decontamination and no single process or method can account for all variables (e.g., hazard, time, number of victims, environmental conditions, resources). These updated Guidelines are intended to identify a simple, consistent mass decontamination process that could be applied with reasonable effectiveness to any HAZMAT/WMD incident. In other words, to use the fastest approach that will cause the least harm and do the most good for the majority of the people.

4.0 Scope

These Guidelines are based on exposure to all hazards and focus on civilian mass casualty decontamination. These Guidelines primarily focus on chemical, biological, and radiological (CBR) agents, but also include Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs), and toxins (collectively referred to in this document as HAZMAT/WMD). These
Guidelines do not cover each type of threat individually, however, the basic principles outlined are applicable to all HAZMAT/WMD situations. This document addresses decontamination of an overwhelming number of victims resulting from a HAZMAT/WMD incident in a population center. Mass casualty decontamination requires a slightly different approach than the individual technical and equipment decontamination applied during typical HAZMAT incidents.

These Guidelines do not replace local Standard Operating Guides/Standard Operating Procedures.

These Guidelines are designed for use during the first minutes of a mass casualty HAZMAT/WMD incident to reduce contamination and minimize casualties.

5.0 Guidelines Format

These Guidelines are divided into two volumes:

5.1 Volume I is a quick reference book and designed to be a short, concise description of procedures to set up and execute mass decontamination. Volume I is designed to be separated and distributed to team members for use during a mass casualty HAZMAT/WMD incident.

5.2 Volume II is a more in-depth compendium of HAZMAT/WMD mass casualty decontamination. It contains the reasoning behind the recommended procedures in Volume I, a review of the Guidelines development process, reference sources, potential best practices, additional considerations, and information concerning the working group that developed these Guidelines.
Figure 5-1. Mass Decontamination Process

1. Victims are evacuated from the hazard area (Hot Zone) and directed to area(s) of safe refuge.
2. A responder performs decon triage. Those with likely exposure undergo mass decon and are then sent to the observation area. Victims with no apparent exposure to the hazard are sent to the observation area.
3. Victims are observed for delayed symptoms and residual contamination.
4. Symptomatic victims undergo medical triage, treatment, and transport to a medical facility.
5. Secondary decon site is established as necessary. Secondary decon may be set up near incident site and/or outside medical facilities.
6.0 Overview

This section discusses the basic foundation and a recommended procedure for mass casualty decontamination. As the graphic on the preceding page demonstrates, mass decontamination is a multi-stage, resource intensive process. The approach presented in these Guidelines represents a standard method of HAZMAT/WMD mass casualty decontamination. The concepts in this section can be implemented quickly by a wide range of first responder organizations and represent the least resource intensive, and most practical and efficient method of mass decontamination.

6.1 Definition of Decontamination

Decontamination refers to means that reduce the hazard of a contaminant. There are two basic methods of decontamination, physical removal and neutralization. Physical removal involves mechanical action with techniques such as gentle friction with a soft cloth or sponge, blotting, and washing. Neutralization involves methods and/or materials to counteract the harmful effects of the contaminant.

The focus of mass casualty decontamination is only on physical removal of the contaminant. The addition of neutralizing agents is likely to cause delay in the execution of mass decontamination, as well as create potential additional hazards and safety issues when decontaminating large numbers of personnel not familiar with the decontamination process. Equipment such as decontamination tents and the use of additives such as soap are best implemented at the secondary decontamination site. If physical assets are limited, one possible method of secondary decontamination is re-running victims through the initial decontamination site, but at a slower and more deliberate pace that emphasizes thorough cleaning and removal of all residual agent. Liquid soap, if available, should be distributed for victims' use during this secondary decontamination.

6.2 Purposes of Decontamination

The three most important reasons for decontaminating exposed victims are:
• Removing the agent from the victim’s skin and clothing, thus reducing further agent exposure and physical effects.
• Protecting emergency responders, medical personnel and others from secondary transfer exposures.
• Preventing victims from spreading contamination over additional areas.

7.0 Mass Casualty Decontamination Operation

These Guidelines identify five basic steps for the process of mass decontamination:

1. Initial Size-up
2. Victim Control and Decontamination Triage
3. Decontamination Setup
4. Mass Decontamination Execution
5. Post Decontamination

These five steps are described briefly below and are described in more detail in Volume II. Appendix A of this volume contains individual checklists for each step. These checklists are designed to be removed and used as quick reference guides during an actual response and mass casualty decontamination. The reverse sides of some of the checklists contain visual graphics designed to support that particular step.

Decontamination must be conducted as soon as possible to be effective in saving lives, limiting injuries and reducing the spread of contamination. Responders should use resources that are immediately available and start decontamination as soon as possible.

Figure 6-1. Off-Gassing Hazard

7.1 Step 1: Initial Size-up

This step is performed in accordance with standard guidelines for first responders when arriving at an incident scene. When HAZMAT/WMD exposure is suspected, first responders perform a safety assessment and attempt to identify signs/symptoms of exposure to determine whether mass decontamination is necessary.

7.2 Step 2: Victim Control and Decontamination Triage

This step involves gaining initial control of the victims and directing them to area(s) of safe refuge so responders can provide guidance and instruction. Decontamination triage involves separating victims into prioritized groups for decontamination. Rapidly identifying victims who
may not require decontamination can significantly reduce the time and resources needed to perform decontamination. The Victim Control/Decontamination Triage checklist included in Appendix A provides recommended priorities for victim decontamination. A Decontamination Triage Decision Tree is included on the back of the checklist.

Figure 7-1. Step 2: Decontamination Triage

7.3 Step 3: Decontamination Setup

This step includes establishing incident scene zones and setting up the actual decontamination site and operation. Section 8.2 of this volume includes instructions and graphics describing set up of a simple Ladder Pipe Decontamination System (LDS). The checklist for step 3 (see Appendix A) also includes these instructions, as well as a graphic representation of the LDS on the reverse side of the checklist.

7.4 Step 4: Mass Decontamination Conduct

Step 4 addresses procedures for performing decontamination on a large number of victims, including victim instructions for properly removing clothing and proceeding through a
decontamination shower corridor. Conduct also covers identification of victims who have been decontaminated and directing them to an area(s) of safe refuge for observation where they can be monitored for delayed symptoms or the need for secondary decontamination. Secondary decontamination with an emulsifier such as soap may be necessary if an oily liquid hazard (e.g., sulfur mustard) is involved and initial decontamination is performed with water only. Though the use of a soap-water solution is best for physical removal of all hazards, it will likely be required for oily liquid agents in order to provide the most effective physical removal of the agent from the victims’ skin.

Only if responders are capable of immediately applying a soap and water solution does this method represent the better solution for all HAZMAT/WMD mass casualty decontamination situations.

7.5 Step 5: Post Decontamination

Step 5 describes actions to be taken following completion of initial mass decontamination, including observing victims for delayed symptoms and evidence of residual contamination; performing secondary decontamination as necessary; arranging for clothing/cover for decontaminated victims; recovering personal items (if possible); and transporting victims to medical facilities for follow-on care.
8.0 Basic All-Hazards Mass Decontamination Approach

8.1 Clothing Removal

Having a victim remove their clothes will greatly reduce risk in all cases. Victims should be encouraged to immediately remove as much clothing as possible – the more clothing removed the better. At a minimum, victims should remove outer garments down to their underwear.

Whenever possible, victims should unbutton or cut clothes to remove them rather than lift them over their head (Figure 8-1). This will reduce the chance of exposing the head, face and eyes to contamination. If clothes must be lifted over the head, instruct victims to do so carefully by placing their hands and arms on the inside of the garment and using their hands to pull the clothing away from the face and head as much as possible when removing it.

Figure 8-1. Proper Removal of Clothing

<table>
<thead>
<tr>
<th>Pulling Clothing Directly Overhead</th>
<th>Using Arms to Shield Clothing from Contact with Face</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting or Unbuttoning</td>
<td></td>
</tr>
</tbody>
</table>

Removal of outer garments may remove 80-90% of physical contamination.

8.2 Water Shower

The most expedient approach following removal of clothing is to use readily available equipment to provide an emergency high-volume, low-pressure (approximately 60 pounds per square inch (psi)) water shower for up to three minutes. While longer and more thorough washing increases the effectiveness of decontamination, depending on the number of victims and resources available, three minutes may not be practical. First responders should adjust the shower time to as little as 30 seconds to enable victims to receive an initial decontamination water shower as rapidly as possible.
Note: Time is critical. DO NOT DELAY initial decontamination to set up decontamination tents, shelter tents, or to add soap.

While victims are waiting to be decontaminated, keep adequate spacing between individuals to avoid secondary contamination and exposure to off-gassing.

When moving through the decontamination shower, victims should tilt their heads back, raise their arms and spread their legs to expose the armpit and groin areas and prevent runoff from the head/hair getting into the eyes, nose or mouth (Figure 8-2). Victims should occasionally turn 90 degrees to expose their entire bodies to the water cross stream (Figure 8-3).

When the contamination does not involve oily, liquid chemical agent, using gentle friction, such as rubbing with hands, a soft cloth, or sponges is recommended to aid in removal of the contamination. This process must start with the head and proceed down the body to the feet.

Figure 8-2. Proper Body Position for Mass Decontamination

When the contamination involves oily, liquid chemical agent (e.g., sulfur mustard), rubbing without the aid of soap is not recommended, as it may increase spread of the agent over a larger surface area of the body, resulting in increased medical risk.
By outstretching the arms and legs, tilting the head back, and occasionally turning 90 degrees, the victim illustrated in Figure 8-3 demonstrates proper technique for proceeding through the decontamination corridor. By tilting his head back, the victim keeps any contamination that might be in his hair or on his head from entering his eyes or mouth. Spreading the arms and legs allows the victim to expose his armpit and groin areas to the water shower. By turning 90 degrees at least once while passing through the decontamination corridor, the victim ensures that the front and back of his torso are exposed to the cross stream of water.

Figure 8-3. Proper Decontamination Corridor Walk-through Technique
The responders in Figure 8-4 successfully perform mass decontamination. The responder at the top of the illustration directs victims into the decontamination corridor. A second responder in the same location instructs victims on proper technique for passing through the corridor. The responder at the bottom of the illustration conducts a quick visual inspection of the victims as they exit and directs them to the observation area, to medical treatment, or to secondary decontamination. As shown, deck guns can be positioned to provide additional water volume, if necessary.

Note: When liquid contamination is involved, soap should be included as soon as possible in the process WITHOUT DELAYING initial decontamination. Soap may be delayed until secondary decontamination if adding it would delay initial decontamination.
9.0 High-Volume, Low-Pressure Decontamination

Figure 9-1 portrays the Ladder Pipe Decontamination System (LDS). The LDS is one example of an expedient equipment set up for establishing high-volume, low-pressure decontamination.

Figure 9-1. Ladder Pipe Decontamination System
The LDS provides a large capacity, high-volume, low-pressure water shower. Ladder pipes, deck guns, and fog nozzles are positioned strategically to create a mass decontamination corridor.

Two engines can create a corridor with water spray from both sides using hose lines and deck guns, while the ladder pipe provides high-volume, low-pressure water flow from above. Multiple LDSs use more than one ladder pipe to increase the length of the decontamination corridor to accommodate large groups of victims. Multiple corridors can be established to provide decontamination for different groups, such as ambulatory and non-ambulatory victims or even to provide decontamination at hospitals.

Responders should establish a mass decontamination system utilizing available resources that enables them to rapidly establish a high-volume, low-pressure water shower decontamination operation.

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**General Rules for HAZMAT/WMD Mass Casualty Decontamination**

1. **Removing clothes is the single most critical step in mass decontamination and may remove 80-90% of physical contamination.**
2. **Do not delay removal of clothes or application of a high-volume, low pressure water shower to set up tents, additional equipment or to create a soap-water solution. The water shower will dilute and remove contamination from the body.**
3. Conduct decontamination triage prior to administering a high-volume, low-pressure water shower.
4. Wash time should be between 30 seconds and three minutes, depending on the situation.
5. When the contamination involves chemical vapors, biological or radiological material, using gentle friction, such as rubbing with hands, cloth or sponges is recommended to aid in removal of the contamination.
6. Rubbing should start with the head and proceed down the body to the feet.
7. Victim observation area(s) should be utilized to monitor victims for signs of delayed symptoms or evidence of residual contamination.
8. Secondary decontamination should be performed as necessary.

**Special Considerations**

**Non-liquid**

- If responders suspect the contamination is biological, radiological, or a gas/vapor, a water-only shower is typically adequate.

**Liquid**

- A secondary decontamination shower that includes a soap-water solution will likely be required for liquid contamination to ensure effective physical removal of agent.
- When removing liquid chemical contamination (e.g., sulfur mustard), rubbing without the aid of soap is not recommended as it may increase spread of the agent over a larger surface area of the body, resulting in increased medical risk.
10.0 Cold Weather Guidelines

Even in cold weather conditions, it is still most practical to conduct your decontamination effort outdoors. The healthy human body can withstand very low temperatures for a brief amount of time. The recommended basic methods of decontamination, immediate clothing removal and a high-volume, low-pressure shower, remain the same for temperatures as low as 36ºF. Once victims are decontaminated, they should be provided with clothing/cover and moved to a heated facility. For temperatures 35ºF and below, removal of clothing and a “dry” decontamination method for removal of liquid contamination may be used outdoors, such as blotting with paper towel, followed by high-volume, low-pressure water shower at a heated facility. Figure 10-2 on the next page provides a simple guide that indicates appropriate cold weather decontamination procedures.

Note: In a mass casualty decontamination situation in extreme cold, decontamination with water could create a greater hazard and result in more cold weather casualties than the contamination hazard.
General Rules for Cold Weather Decontamination

1 - Conduct some form of decontamination regardless of temperature conditions.
2 - Remove clothing outdoors
3 - If victims are outdoors in very low temperatures (<36°F), use a dry method of decontamination (e.g., removal of clothing, blotting) instead of water for liquid contamination.
4 - After dry decontamination, victims should be moved inside or to a heated area for water/soapy water high-volume, low-pressure water shower and to mitigate the effects of cold weather.
5 - Observe for signs of hypothermia, delayed symptoms and completeness of decontamination.
6 - Follow all other General Rules for Mass Casualty Decontamination

Figure 10-2. Cold Weather Decontamination Guide
11.0 Summary

The key to successful mass decontamination is to use the fastest approach that will cause the least harm and do the most good for the majority of the victims. There is no perfect solution that can account for every variable and ensure rapid, completely effective decontamination of large numbers of victims for all hazards.

First responders will have to determine the need for mass decontamination; the extent and practicality of performing decontamination triage; the scope of resources needed versus resources available; the need for application of soap; and whether soap can be rapidly applied during initial decontamination or will have to be delayed until secondary decontamination can be performed.

Appendix A of Volume I contains the checklists and, where applicable, supporting graphics for each of the five steps described in section 7.0, as well as an overall checklist that may be used by the Incident Commander, Operations Chief, or Decontamination Team Leader. These checklists and graphics are designed to be removed and used by responders as a ready reference during any mass decontamination situation.
Appendix A: Quick Reference Guides for Mass Decontamination

The following pages are designed to be stand alone, quick reference checklists and supporting graphics that concisely capture information to aid first responders in a mass decontamination situation for a HAZMAT/WMD incident. This section is meant to be printed double-sided so that the supporting graphics are on the reverse side of the checklist.

Guidelines for HAZMAT/WMD Mass Casualty Decontamination

INCIDENT COMMANDER’S OVERVIEW CHECKLIST

☐ Establish a visible command post.
☐ Conduct scene safety assessment, to include secondary devices.
☐ Protect yourself.
☐ Approximate casualties.
☐ Determine type/state (liquid, solid or gas) of the hazard.
☐ Assess risks and determine need for decontamination.
☐ Conduct Decontamination Triage to prioritize victims.
☐ Communicate decontamination process to the victims (e.g., remove garments down to underwear immediately).
☐ Notify medical facilities.
☐ Establish perimeter/zones.
☐ Set up decontamination site.
☐ Execute decontamination.
☐ Observe victims for delayed symptoms.
☐ Perform Secondary decontamination (as necessary).
☐ Transport casualties to medical facility (as necessary).

When responders are unable to determine if actual chemical agent exposure has occurred, and in those situations where actual exposure appears unlikely, decontamination should be deferred PENDING OBSERVATION AND/OR SCENE INVESTIGATION. If symptoms develop, individuals should be treated followed by prompt field decontamination by the most expeditious means available.
Cold Zone

1. Victims are evacuated from the hazard area (Hot Zone) and directed to area(s) of safe refuge.
2. A responder performs decon triage. Those with likely exposure undergo mass decon and are then sent to the observation area. Victims with no apparent exposure to the hazard are sent to the observation area.
3. Victims are observed for delayed symptoms and residual contamination.
4. Symptomatic victims undergo medical triage, treatment, and transport to a medical facility.
5. Secondary decon site is established as necessary. Secondary decon may be set up near incident site and/or outside medical facilities.
Guidelines for HAZMAT/WMD Mass Casualty Decontamination

INITIAL SIZE-UP CHECKLIST

- Communicate the incident to first responders.
- Conduct scene safety assessment.
- Do not rush into the incident scene – protect yourself.
- Local law enforcement should check for possible secondary devices near decontamination site.
- Look for signs and symptoms of exposure and utilize detectors, if available.
- Estimate how many suspected victims are involved.
- Determine whether mass decontamination is required.
- Determine what resources are needed and readily available for mass decontamination.
- Determine the impact of weather conditions on decontamination operations (temperature, wind speed, wind direction).
- Decontamination should be set up upwind from the incident. If the temperature is below 65°F, consider cold weather decontamination.
- Alert hospitals to prepare for victims exposed to contamination.
Guidelines for HAZMAT/WMD Mass Casualty Decontamination

VICTIM CONTROL/DECONTAMINATION TRIAGE CHECKLIST

☐ Ensure all responders are properly protected.

☐ Gain control of the victims as rapidly as possible (public address systems, instructional signs) and direct victims to area(s) of safe refuge to begin decontamination or for observation.

☐ In multi-lingual communities, use multi-lingual or illustrated signs to provide instructions to victims.

☐ Perform decontamination triage by separating and prioritizing victims into categories in preparation for mass decontamination (see Decontamination Triage Tree on reverse).

- Non-ambulatory
- Ambulatory and symptomatic
- Ambulatory, non-symptomatic, exposed to contaminant
- Ambulatory, non-symptomatic, no obvious exposure to contaminant

Note: it is possible that the severity of conventional injuries may require that certain victims receive an elevated priority, regardless of whether they are showing obvious signs/symptoms of exposure.

☐ ENCOURAGE VICTIMS TO REMOVE AS MUCH CLOTHING AS POSSIBLE, BUT AT LEAST REMOVE OUTER GARMENTS DOWN TO UNDERWEAR. Cutting and/or unbuttoning is preferred to pulling clothing over the head.

☐ If clothes must be lifted over the head, instruct victims to do so carefully by placing hands and arms inside the garment and using the hands to pull the head opening away from the face and head as much as possible.
HAZMAT/WMD

**Known Agent**
- Perform Decon as Needed
  - Contact with Material
    - Remove Clothing
    - Wet Decon
    - Observe for Delayed Symptoms
  - No Contact with Material

**Unknown Agent**
- Solid, Biological or Radiological Particles
  - Contact with Material
    - Remove Clothing
    - Wet Decon
    - Observe for Delayed Symptoms
  - No Contact with Material

- Liquid
  - Contact with Material
    - Remove Clothing
    - Wet Decon
    - Observe for Delayed Symptoms
  - No Contact with Material
    - No Symptoms
    - Observe for Delayed Symptoms
    - Decon with Soap
    - Observe for Delayed Symptoms

- Gas
  - Contact with Material
    - Remove Clothing
    - Wet Decon
    - Observe for Delayed Symptoms
  - No Contact with Material
    - No Symptoms
    - Observe for Delayed Symptoms

- Unknown or Combination
  - If liquid not ruled out, follow liquid decontamination procedures

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22
Guidelines for HAZMAT/WMD Mass Casualty Decontamination

DECONTAMINATION SETUP CHECKLIST

- **Ensure all responders are properly protected.**
  - Local law enforcement should check for possible secondary devices near the selected decontamination site(s).

- Establish Hot/Warm/Cold zones. Set up barriers or police tape to delineate zones. Post signs directing victims on where to go and what to do.

- If not already accomplished, instruct victims to remove as much clothing as possible. Cutting and unbuttoning is preferred to pulling clothing over the head. Collect clothing in the Warm zone.

- Set up decontamination site upwind of the hot zone. Ideally, it should be uphill from the hot zone, easily accessible for responders, and have good drainage.

- Suggested setup: Ladder Pipe Decontamination System (or other expedient system) to dispense high-volume, low-pressure water (~60 psi) with wide fog pattern.

*Note: Decontamination of exposed and/or symptomatic victims should not wait for set up of decontamination tents or additives such as soap,*

- Establish victim observation area(s) and secondary decontamination area(s) as necessary.
Ladder Pipe Decontamination System Method

1. Position two trucks parallel to each other approximately 20 feet apart.

2. Position Ladder-Pipe Truck if available.

3. Assign personnel to decontamination stations to control and provide instructions to victims.

4. Apply continuous low pressure-high volume water deluge.
Guidelines for HAZMAT/WMD Mass Casualty Decontamination

MASS DECONTAMINATION EXECUTION CHECKLIST

☐ Instruct victims to move to specific areas depending on medical and decontamination triage status.

☐ If not already accomplished, instruct victims to remove as much clothing as possible.

☐ Establish a method for collecting and tracking personal items (e.g., bag labeled with victim name/number).

☐ Based on decontamination triage prioritization, instruct victims to move through the decontamination corridor. Wash time should be between 30 seconds and three minutes. Do not delay the high-volume, low pressure water shower to create a soap-water solution.

☐ Instruct victims to:

   ◆ Tilt head back.
   ◆ Raise and spread arms and spread legs to expose armpits and groin.
   ◆ Walk through shower system slowly, and periodically turn 90 degrees.
   ◆ When the contamination involves chemical vapor, biological or radiological materials, victims should apply gentle friction by using their hands, a cloth, or a sponge to aid in removal of contamination.
   ◆ Rubbing should start with the head and proceed down the body to the feet.
   ◆ When the contamination is a liquid chemical agent, DO NOT apply friction without the aid of soap as this may spread the hazard over the body and increase medical risk.

☐ After passing through decontamination corridor, provide victims with clothing/cover.

☐ Use some means to identify victims that have been decontaminated.

☐ Direct symptomatic patients to additional treatment or secondary decontamination area(s) as appropriate.

☐ Direct non-symptomatic victims to observation area(s).
Deluge victims for 30 seconds to 3 minutes depending on the scale of the incident.

Instruct Victims to:
- Head back
- Arms and legs out
- Make quarter turns to occasionally expose the front and back to cross stream.
Guidelines for HAZMAT/WMD Mass Casualty Decontamination

COLD WEATHER DECONTAMINATION (<65°F) CHECKLIST

☐ Conduct some form of decontamination regardless of temperature conditions.
☐ Remove clothing outdoors
☐ If victims are outdoors in very low temperatures (<36°F), use a dry method of decontamination (e.g., removal of clothing, blotting) instead of water for liquid contamination.
☐ After dry decontamination, victims should be moved inside or to a heated area for water/soapy water high-volume, low-pressure water shower and to mitigate the effects of cold weather.
☐ Physically identify decontaminated victims (e.g., tag around neck).
☐ Observe for signs of hypothermia, delayed symptoms and completeness of decontamination.
☐ Follow all other General Rules for Mass Casualty Decontamination
Temperature Decontamination Guide

<table>
<thead>
<tr>
<th>Clothing Removal</th>
<th>Decontamination</th>
<th>Post Decontamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;65°F</td>
<td>Outdoors</td>
<td>Outdoors</td>
</tr>
<tr>
<td>64°F - 36°F</td>
<td>Outdoors</td>
<td>In or Outdoors</td>
</tr>
<tr>
<td>&lt; 35°F</td>
<td>Dry Decon- Outdoors</td>
<td>Wet Decon- Indoors</td>
</tr>
</tbody>
</table>
Guidelines for HAZMAT/WMD Mass Casualty Decontamination

POST DECONTAMINATION CHECKLIST

☐ Observe victims for delayed symptoms and completeness of decontamination.
☐ Perform secondary decontamination as necessary.
☐ Transport symptomatic victims to medical facilities for assistance.
☐ Arrange for clothing/cover and possible recovery of personal effects.
☐ Collect contaminated personal items for possible decontamination.
☐ Provide follow-up information to the victims (e.g., symptoms to watch for).
☐ Provide instructions to victims prior to release (e.g., care, follow-up).
☐ Decontaminate all responders, equipment, and incident site.
☐ Conduct medical check on all responders.
☐ Complete victim and first responder documentation and accountability.
Appendix B: Glossary

**Ambulatory** – Victims able to understand directions, talk, and walk unassisted.

**Casualty** – An inured person.

**Cold Zone** – Uncontaminated area of a HAZMAT incident site.

**Deck gun** – Aimable, controllable high-capacity water jet used for manual firefighting.

**Decontamination Triage** – Prioritization of victims for decontamination based on injury and evidence of contamination and/or exposure to the hazard.

**Fog nozzle** – Firefighting hose nozzle that separates water into droplets.

**Hazardous Material (HAZMAT)** – Any item or agent with potential to cause harm to humans and animals.

**Hoseline** – A thick, high-pressure hose used to carry water to a fire to extinguish it.

**Hot Zone** – Contaminated area of HAZMAT incident that must be isolated and requires suitable protective equipment to enter and decontamination upon exit.

**Ladder pipe** – Nozzle attached to aerial ladder and used to direct a heavy stream of water.

**Mass Casualty** – Any large number of casualties produced in a relatively short period of time, usually as the result of a single incident.

**Mass Decontamination** – Decontamination of large numbers of people, in the event of contamination by a harmful substance.

**Neutralization** – Counteraction of the effects of a hazardous substance.

**Non-ambulatory** – Victims who are unconscious, unresponsive, or unable to move without assistance.

**Sarin** – An extremely toxic nerve agent; also known as GB.

**Toxic Industrial Chemical (TIC)** – Chemical compounds used or produced in industrial processes that are toxic to humans.

**Toxic Industrial Material (TIM)** – Toxic radioactive compounds used or stored by industry.

**Triage** – Evaluation of exposed individuals based on type and seriousness of injury for the purpose of decontamination prioritization.

**Warm Zone** – Area where personnel, equipment decontamination, and hot zone support takes place.

**Weapon of Mass Destruction (WMD)** – Weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people.
Appendix C: Acronym List

**CBR** – Chemical, biological, radiological

**HAZMAT** – Hazardous material

**LDS** – Ladder-Pipe Decontamination System

**TIC** – Toxic Industrial Chemical

**TIM** – Toxic Industrial Material

**WMD** – Weapon of Mass Destruction