

NFPA® 473

Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents

2013 Edition



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NFPA® 473

Standard for

Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents

2013 Edition

This edition of NFPA 473, *Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents*, was prepared by the Technical Committee on Hazardous Materials Response Personnel. It was issued by the Standards Council on May 29, 2012, with an effective date of June 18, 2012, and supersedes all previous editions.

This edition of NFPA 473 was approved as an American National Standard on June 18, 2012.

Origin and Development of NFPA 473

Following the development of NFPA 471, *Recommended Practice for Responding to Hazardous Materials Incidents* (which was incorporated into NFPA 472 and NFPA 473 for the 2008 editions), and NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials Incidents* (which was retitled *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents* for the 2008 edition), the Technical Committee on Hazardous Materials Response Personnel undertook the development of a standard relating to the professional competencies of emergency medical personnel who could be required to respond to hazardous materials incidents. The roles and responsibilities of EMS personnel at hazardous materials incidents had not been identified in the majority of emergency response systems.

The first edition of NFPA 473 was released in 1992. In the 1997 edition, the committee reviewed the first edition and updated it for consistency with the related NFPA 471 and NFPA 472 and for clarity of the competencies.

In 1998 the committee processed a Tentative Interim Amendment (TIA) to address concerns related to the unique challenges of responding to hazardous materials incidents that could be caused by criminal or terrorist activity. Those concerns were motivated by the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City and other national and international incidents.

The TIA added paragraphs on recognizing criminal and terrorist activities, differentiating between chemical and biological agents, actions to take when criminal or terrorist activity is suspected, providing patient care at incidents resulting from chemical and biological agents, and other similar competencies.

In the 2002 edition, the TIA material was updated and moved into the body of the text, along with other updates to coordinate with a similar TIA and other new material in NFPA 472 related to weapons of mass destruction and incidents involving radioactive materials. Additional changes in wording and format were made in accordance with the 2000 edition of the *Manual of Style for NFPA Technical Committee Documents*.

The 2008 edition of NFPA 473 was completely rewritten to address the hazards that emergency medical services (EMS) personnel encounter from hazardous materials/weapons of mass destruction. New definitions and technical information were added. The requirements in the 2008 edition enhanced the safety and protection of response personnel and all components of the EMS system.

The 2013 edition adopts the concept of mission-specific competencies that were previously integrated into the 2008 edition of NFPA 472. This new edition is expanded to include a new chapter on competencies for advanced life support (ALS) responders assigned mission-specific responsibilities. Mission-specific responsibilities include ALS responders assigned to a hazardous materials response team, ALS responders assigned to provide clinical intervention at a hazardous materials/WMD incident, and ALS responders assigned to treatment of smoke inhalation victims.

In Memoriam and Honor

The Technical Committee would like to dedicate NFPA 473, *Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2013 edition to three of our long-time committee members and friends.

John Eversole was an early member of the NFPA Technical Committee on Hazardous Materials Response Personnel and served for 20 years, including nine years as Committee Chairman. Chief Eversole was a 32-year veteran of the Chicago Fire Department and founded that department's Hazardous Materials Incident Team. John retired from active duty in 2001 but continued to serve as the Chairman of both the NFPA and the IAFC Hazardous Materials Committees, as well as a member of the Inter-Agency Board (IAB) until his passing in 2007. John Eversole was a tireless advocate for the fire service and hazardous materials responders and will be truly missed.

Jerry Grey was an original member of the Technical Committee, representing the San Francisco, CA, Fire Department. Jerry served for many years as the Vice Chairman, and is well known throughout the U.S. for his training and educational efforts in the "early days" of hazmat response. Among his accomplishments were his work with Bob Turkington on The HazCat Kit, and with Chief Hank Howard for sharing their experiences at a 1983 Benicia, CA, tank car incident that ultimately resulted in the development of the NFPA chemical protective clothing standards (NFPA 1991 and 1992). Jerry is now retired and enjoying the good life with his wife Veronica.

Dieter Heinz was another Californian who joined the Committee in 1987 and was well-known throughout the hazmat response community for his excellent Chemistry of Hazardous Materials programs at the National Fire Academy and other locations. A long-time representative of the California State Firefighters Association, Dieter unexpectedly passed away in 2011. We will long remember his laugh, the "Dieterisms," and his contributions to our profession.



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Committee Scope: This Committee shall have primary responsibility for documents on the requirements for professional qualifications, professional competence, training, procedures, and equipment for emergency responders to hazardous materials/weapons of mass destruction incidents.

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NFPA 473**Standard for****Competencies for EMS Personnel
Responding to Hazardous
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Information on referenced publications can be found in Chapter 2 and Annex C.

Chapter 1 Administration

1.1 Scope. This standard identifies the levels of competence required of emergency medical services (EMS) personnel who respond to incidents involving hazardous materials or weapons of mass destruction (WMD).

1.1.1 This document specifically covers the requirements for basic life support and advanced life support personnel in the pre-hospital setting.

1.1.2 This standard is based on the premise that all EMS responders are trained to meet at least the core competencies of the operations level responders as defined in Chapter 5 of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*.

1.2 Purpose. The purpose of this standard is to specify minimum requirements of competence and to enhance the safety and protection of response personnel and all components of the emergency medical services system.

1.2.1 It is not the intent of this standard to restrict any jurisdiction from exceeding these minimum requirements.

1.3* CDC Categories A, B, and C. This standard uses the U.S. Centers for Disease Control and Prevention (CDC) categories of diseases and agents.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2013 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2012 edition.

NFPA 1584, *Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises*, 2008 edition.

2.3 Other Publications.

2.3.1 U.S. Government Publications. U.S. Government Printing Office, Washington, DC 20402.

Emergency Response Guidebook, Washington, D.C.: U.S. Department of Transportation, 2012.

Title 18 U.S. Code Section 2332a, “Use of Weapons of Mass Destruction,” Washington, D.C.: Government Printing Office.

Title 29, Code of Federal Regulations, Part 1910.120, *Hazardous Waste Operations and Emergency Response*, U.S. Department of Labor, 1994.

ICS Forms, www.fema.gov/emergency/nims/JobAids.shtm, ICS Form 206.pdf.

2.3.2 Other Publications.

Merriam-Webster’s Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections. (Reserved)**Chapter 3 Definitions**

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster’s Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.4 Shall. Indicates a mandatory requirement.

3.2.5 Should. Indicates a recommendation or that which is advised but not required.

3.2.6 Standard. A document, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the *Manual of Style for NFPA Technical Committee Documents*.

3.3 General Definitions.

3.3.1 Advanced Life Support (ALS). Emergency medical treatment beyond basic life support level as defined by the medical authority having jurisdiction in conjunction with the American Heart Association guidelines.

3.3.1.1 Emergency Medical Technician — Intermediate (EMTI). An individual who has completed a course of instruction that includes selected modules of the U.S. Department of Transportation National Standard EMT — Paramedic curriculum and who holds an intermediate level EMT-I or EMT-C certification from the authority having jurisdiction.

3.3.1.2 Emergency Medical Technician — Paramedic (EMTP). An individual who has successfully completed a course of instruction that meets or exceeds the requirements of the U.S. Department of Transportation National Standard EMT — Paramedic curriculum and who holds an EMT-P certification from the authority having jurisdiction.

3.3.1.3 Medical Director. Plans and directs all aspects of an organization’s or system’s medical policies and programs, including operations and offline (protocol) and online medical direction (direct communication consultation); is responsible for strategic clinical relationships with other physicians; oversees the development of the clinical content in materials; ensures all clinical programs are in compliance; writes and reviews research publications appropriate to support clinical service offerings; requires an active degree in medicine with specialty experience or training in emergency and disaster medical mitigation, administration, and management; relies on experience and judgment to plan and accomplish goals; and typically coordinates with the incident command.

3.3.1.4 Medical Team Specialist. Any healthcare provider or medically trained specialist acting under the authority of the medical director and within the context of the National Incident Management System authorized to act as the medical point of contact for an incident. This can include, but is not exclusive to, nurses, nurse practitioners, EMTs, ECAs, physician assistants, and in some cases a health and safety officer.

3.3.2* Allied Professional. That person who possesses the knowledge, skills, and technical competence to provide assistance in the selection, implementation, and evaluation of mission-specific tasks at a hazardous materials/weapons of mass destruction (WMD) incident.

3.3.3 Basic Life Support (BLS). Emergency medical treatment at a level as defined by the medical authority having jurisdiction in conjunction with American Heart Association guidelines.

3.3.3.1* Emergency Care First Responder (ECFR). An individual who has successfully completed the specified emergency care first responder course developed by the U.S.

Department of Transportation and who holds an ECFR certification from the authority having jurisdiction.

3.3.3.2 Emergency Medical Technician — Ambulance/Basic (EMTA/B). An individual who has successfully completed an EMT-A or EMT-B curriculum developed by the U.S. Department of Transportation or equivalent, who holds an EMT-A/B certification from the authority having jurisdiction.

3.3.4 Competence. The possession of knowledge, skills, and judgment needed to perform indicated objectives satisfactorily.

3.3.5* Components of Emergency Medical Service (EMS) System. The parts of a comprehensive plan to treat an individual in need of emergency medical care following an illness or injury.

3.3.6 Contaminant. A hazardous material, or the hazardous component of a weapon of mass destruction (WMD), that physically remains on or in people, animals, the environment, or equipment, thereby creating a continuing risk of direct injury or a risk of exposure.

3.3.7 Core Competencies. The knowledge, skills, and judgment needed by operations level responders who can respond to releases or potential releases of hazardous materials/WMD.

3.3.8* Demonstrate. To show by actual performance.

3.3.9 Describe. To explain verbally or in writing using standard terms recognized in the hazardous materials response community.

3.3.10 Emergency Medical Services (EMS). The provision of treatment, such as first aid, cardiopulmonary resuscitation, basic life support, advanced life support, and other prehospital procedures, including transportation, of patients.

3.3.11 EMS Hazardous Materials (EMS/Hazardous Materials/WMD) Responder.

3.3.11.1 Emergency Medical Services Responders to Hazardous Materials/Weapon of Mass Destruction at the ALS Level (ALS Level Responder). In addition to their ALS certification, operations level responders who are assigned EMS mission-specific responsibilities at hazardous materials/WMD incidents shall be trained to meet all competencies of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, Chapters 4 and 5, and all competencies for the assigned responsibilities in NFPA 473, Chapters 4 and 5.

3.3.11.2 Emergency Medical Services Responders to Hazardous Materials/Weapon of Mass Destruction at the BLS Level (BLS Level Responder). In addition to their BLS certification, operations level responders who are assigned EMS mission-specific responsibilities at hazardous materials/WMD incidents shall be trained to meet all competencies of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, Chapters 4 and 5, and all competencies for the assigned responsibilities in NFPA 473, Chapter 4.

3.3.12 Exposure. The act or condition whereby responders or civilians come into contact with hazardous materials/WMD that results in any level of physical injury or acute/delayed health effect.

3.3.13* Hazardous Material. A substance (matter — solid, liquid, or gas — or energy) that when released is capable of creating harm to people, the environment, and property, including weapons of mass destruction (WMD) as defined in 18 U.S.



Code, Section 2332a, as well as any other criminal use of hazardous materials, such as illicit laboratories, environmental crimes, or industrial sabotage. Hazardous materials/WMD shall be used throughout this document to represent hazardous materials/weapons of mass destruction.

3.3.14 Identify. To select or indicate verbally or in writing using standard terms to establish the identity of; the fact of being the same as the one described.

3.3.15 Incident. An emergency involving the release or potential release of hazardous materials/WMD.

3.3.16* Incident Commander (IC). The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources.

3.3.17 Incident Command System (ICS). A management system designed to enable effective and efficient on-scene incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

3.3.18* Incident Management System (IMS). A plan that defines the roles and responsibilities to be assumed by personnel and the operating procedures to be used in the management and direction of emergency operations to include the incident command system, multiagency coordination system, training, and management of resources.

3.3.19 Medical Control. The physician or designee providing direction for patient care activities in the prehospital setting.

3.3.20 Medical Surveillance. The ongoing process of medical evaluation of hazardous materials response team members and public safety personnel who respond to a hazardous materials incident.

3.3.21 Mission-Specific Competencies. The knowledge, skills, and judgment needed by operations level responders who have completed the requisite core competencies and who are designated by the authority having jurisdiction to perform mission-specific tasks, such as decontamination, victim/hostage rescue and recovery, evidence preservation and sampling, and so forth.

3.3.22 Patient. Any person or persons requiring or requesting a BLS/ALS evaluation or intervention at the scene of a hazardous materials/WMD incident.

3.3.23 Protocol. A guideline for a series of sequential steps directing patient treatment.

3.3.24 Region. A geographic area that includes the local and neighboring jurisdiction for an EMS agency.

3.3.25* Weapon of Mass Destruction (WMD). (1) Any destructive device, such as any explosive, incendiary, or poison gas bomb, grenade, rocket having a propellant charge of more than four ounces, missile having an explosive or incendiary charge of more than one quarter ounce (7 grams), mine, or device similar to the preceding description; (2) any weapon involving toxic or poisonous chemicals; (3) any weapon involving a disease organism; or (4) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.

3.3.25.1 Radiological Weapons of Mass Destruction.

3.3.25.1.1* Improvised Nuclear Device (IND). An illicit nuclear weapon that is bought, stolen, or otherwise ob-

tained from a nuclear state (that is, a national government with nuclear weapons), or a weapon fabricated from fissile material that is capable of producing a nuclear yield.

3.3.25.1.2* Radiation Dispersal Device (RDD). A device designed to spread radioactive material through a detonation of conventional explosives or other (non-nuclear) means; also referred to as a “dirty bomb.”

3.3.25.1.3* Radiation Exposure Device (RED). Radioactive material, either as a sealed source or as material within some type of container, or a radiation-generating device, such as an x-ray device, that directly exposes people to ionizing radiation; used interchangeably with the term *radiological exposure device* or *radio emitting device*.

Chapter 4 Competencies for Hazardous Materials/WMD Basic Life Support (BLS) Responder

4.1 General.

4.1.1 Introduction. All emergency medical services (EMS) personnel at the hazardous materials/WMD basic life support (BLS) responder level, in addition to their BLS certification, shall be trained to meet at least the core competencies of the operations level responders as defined in Chapter 5 of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, and all competencies of this chapter.

4.1.2 Goal. The goal of the competencies at the BLS responder level shall be to provide the individual with the knowledge and skills necessary to safely deliver BLS at hazardous materials/WMD incidents, function within the established IMS/ICS, and perform the following duties:

- (1) Analyze a hazardous materials/WMD incident to determine the potential health hazards encountered by the BLS responder, other responders, and anticipated and actual patients by completing the following tasks:
 - (a) Survey an incident where hazardous materials/WMD have been released and evaluate suspected and identified patients for signs and symptoms of exposure
 - (b) Collect hazard and response information from available technical resources to determine the nature of the problem and potential health effects of the substances involved
- (2) Plan to deliver BLS to any exposed patient within the scope of practice by completing the following tasks:
 - (a) Identify preplans of high-risk areas and occupancies to identify potential locations where significant human exposures can occur
 - (b) Identify the capabilities of the hospital network to accept exposed patients and perform emergency decontamination if required
 - (c) Identify the medical components of the communication plan
 - (d) Describe the role of the BLS level responder as it relates to the local emergency response plan and established IMS/ICS
- (3) Implement a prehospital treatment plan within the scope of practice by completing the following tasks:
 - (a) Determine the nature of the hazardous materials/WMD incident as it relates to anticipated or actual patient exposures and subsequent medical treatment

- (b) Identify the need for and the effectiveness of decontamination efforts
- (c) Determine if the available medical resources will meet or exceed patient care needs
- (d) Describe evidence preservation issues associated with patient care
- (e) Develop and implement a medical monitoring plan for responders
- (f) Report and document the actions taken by the BLS responder at the incident scene

4.2 Competencies — Analyzing the Incident.

4.2.1 Surveying Hazardous Materials/WMD Incidents. Given scenarios of hazardous materials/WMD incidents, the BLS responder shall assess the nature and severity of the incident as it relates to anticipated or actual EMS responsibilities at the scene.

4.2.1.1 Given examples of the following types of containers, the BLS responder shall identify the potential mechanisms of injury/harm and possible treatment modalities:

- (1) Pressure
- (2) Nonpressure
- (3) Cryogenic
- (4) Radioactive

4.2.1.2 Given examples of the nine U.S. Department of Transportation (DOT) hazard classes, the BLS responder shall identify possible treatment modalities associated with each hazard class.

4.2.1.3 Given examples of various hazardous materials/WMD incidents at fixed facilities, the BLS responder shall identify the following available health-related resource personnel:

- (1) Environmental health and safety representatives
- (2) Radiation safety officers (RSO)
- (3) Occupational physicians and nurses
- (4) Site emergency response teams
- (5) Product or container specialists

4.2.1.4 Given various scenarios of hazardous materials/WMD incidents, the BLS responder, working within an IMS/ICS, shall evaluate the off-site consequences of the release based on the physical and chemical nature of the released substance and the prevailing environmental factors, to determine the need to evacuate or to shelter-in-place affected persons.

4.2.1.5 Given the following biological agents, the BLS responder shall describe the signs and symptoms of exposure and/or illness and the likely means of dissemination:

- (1) Variola major virus (smallpox)
- (2) *Clostridium botulinum*
- (3) Coliforms (e.g., *E. coli* O157:H7)
- (4) Ricin toxin
- (5) *Bacillus anthracis* (anthrax)
- (6) Venezuelan equine encephalitis virus
- (7) *Rickettsia*
- (8) *Yersinia pestis* (plague)
- (9) *Francisella tularensis* (tularemia)
- (10) Viral hemorrhagic fever
- (11) Other CDC Category A, B, or C-listed organism

4.2.1.6 Given examples of various types of hazardous materials/WMD incidents involving toxic industrial chemicals (TICs) and toxic industrial materials (TIMs) (e.g., corrosives, reproductive hazards, carcinogens, nerve agents, flammable and/or explosive

hazards, blister agents, blood agents, choking agents, and irritants), the BLS responder shall determine the general health risks to patients exposed to those substances in the case of any release with the following:

- (1) Visible cloud
- (2) Liquid pooling
- (3) Solid dispersion

4.2.1.7 Determining If a Hazardous Materials/WMD Incident Is an Illicit Laboratory Operation. Given examples of hazardous materials/WMD incidents involving illicit laboratory operations, BLS responders assigned to respond to illicit laboratory incidents shall identify the potential drugs/WMD being manufactured and shall meet the following related requirements:

- (1)*Given examples of illicit drug manufacturing methods, describe the operational considerations, hazards, and products involved in the illicit process
- (2) Given examples of illicit chemical WMD methods, describe the operational considerations, hazards, and products involved in the illicit process
- (3) Given examples of illicit biological WMD methods, describe the operational considerations, hazards, and products involved in the illicit process
- (4) Given examples of illicit laboratory operations, describe the potential booby traps that have been encountered by response personnel
- (5) Given examples of illicit laboratory operations, describe the agencies that have investigative authority and operational responsibility to support the response

4.2.1.8 Given a scenario involving radioactive materials, including an accidental release, a radiological dispersion device (RDD), and a radiological exposure device (RED), the BLS responder shall determine the pre-hospital care based upon the probable health risks and potential patient outcomes by completing the following:

- (1) Determine the most likely exposure pathways for a given radiation exposure, including inhalation, ingestion, injection, and direct skin exposure
- (2) Identify the difference between radiation exposure and radioactive contamination and the health concerns associated with each

4.2.1.9 Given three examples of pesticide labels and labeling, the BLS responder shall use the following information to determine the associated health risks:

- (1) Hazard statement
- (2) Precautionary statement
- (3) Signal word
- (4) Pesticide name

4.2.2 Collecting and Interpreting Hazard and Response Information. The BLS responder shall obtain information from the following sources to determine the nature of the medical problem and potential health effects:

- (1) Hazardous materials databases
- (2) Clinical monitoring
- (3) Reference materials (e.g., MSDS and ERG)
- (4)*Technical information centers (e.g., CHEMTREC, CANUTEC, and SETIQ) and local, state, and federal authorities
- (5) Allied professionals
- (6) Regional poison control centers



4.2.3 Establishing and Enforcing Scene Control Procedures.

Given two scenarios involving hazardous materials/WMD incidents, the BLS responder shall identify how to establish and enforce scene control, including control zones and emergency decontamination, and communications between responders and to the public and shall meet the following requirements:

- (1) Identify the procedures for establishing scene control through control zones
- (2) Identify the criteria for determining the locations of the control zones at hazardous materials/WMD incidents
- (3) Identify the basic techniques for the following protective actions at hazardous materials/WMD incidents:
 - (a) Evacuation
 - (b) Shelter-in-place protection
 - (c) Isolation of the hazard area and denial of entry
- (4) Demonstrate the ability to perform emergency decontamination
- (5) Identify the items to be considered in a safety briefing prior to allowing personnel to work at the following:
 - (a) Hazardous materials incidents
 - (b) Hazardous materials/WMD incidents involving criminal activities
- (6) Identify the procedures for ensuring coordinated communication between responders and to the public

4.3 Competencies — Planning the Response.**4.3.1 Identifying High Risk Areas for Potential Exposures.**

4.3.1.1 The BLS responder, given an events calendar and pre-incident plans, which can include the local emergency planning committee plan, as well as the agency's emergency response plan and standard operating procedures (SOPs), shall identify the venues for mass gatherings, industrial facilities, potential targets for terrorism, and any other location where an accidental or intentional release of a harmful substance can pose a health risk to any person in the local geographical area as determined by the AHJ and shall identify the following:

- (1) Locations where hazardous materials/WMD are used, stored, or transported
- (2) Areas and locations that present a potential for a high loss of life or rate of injury in the event of an accidental or intentional release of hazardous materials/WMD
- (3)*External factors that may complicate a hazardous materials/WMD incident

4.3.2 Determining the Capabilities of the Local Hospital Network.

4.3.2.1 The BLS responder shall identify the following methods and vehicles available to transport hazardous materials patients and shall determine the location and potential routes of travel to the medically appropriate local and regional hospitals, based on the patients' needs:

- (1) Adult trauma centers
- (2) Pediatric trauma centers
- (3) Adult burn centers
- (4) Pediatric burn centers
- (5) Hyperbaric chambers
- (6) Field hospitals
- (7) Dialysis centers
- (8) Supportive care facilities
- (9) Forward deployable assets

- (10) Other specialty hospitals or medical centers

4.3.2.2 Given a list of receiving hospitals in the region, the BLS responder shall describe the location, availability, and capability of hospital-based decontamination facilities.

4.3.2.3 The BLS responder shall describe the BLS protocols for pre-hospital care and SOPs for a mass casualty incident (MCI), including triage, treatment, and transport at a hazardous materials/WMD incident where exposures have occurred as developed by the AHJ and the prescribed role of medical control and poison control centers.

4.3.2.4 The BLS responder shall identify the formal and informal mutual aid resources (hospital- and nonhospital-based) for the field management of multicase incidents, as follows:

- (1) Mass-casualty trailers with medical supplies
- (2) Mass-decedent capabilities
- (3) Regional decontamination units
- (4) Replenishment of medical supplies during long-term incidents
- (5) Rehabilitation units for the EMS responders
- (6) Replacement transport units for vehicles lost to mechanical trouble, collision, theft, and contamination

4.3.2.5 The BLS responder shall identify the special hazards associated with inbound and outbound air transportation of patients exposed to hazardous materials/WMD.

4.3.3 Identifying Incident Communications.

4.3.3.1 Given an incident communications plan, the BLS responder shall identify the following:

- (1) Medical components of the communications plan
- (2) Ability to communicate with other responders, transport units, and receiving facilities

4.3.3.2 Given examples of various patient exposure scenarios, the BLS responder shall describe the following information to be transmitted to the medical or poison control center or the receiving hospital prior to arrival:

- (1) Name of the substance(s) involved
- (2) Physical and chemical properties of the substance(s) involved
- (3) Number of victims being transported
- (4) Age and sex of transported patient
- (5) Patient condition and chief complaint
- (6) Medical history
- (7) Circumstances and history of the exposure, such as duration of exposure and primary route of exposure
- (8) Vital signs, initial and current
- (9) Symptoms described by the patient, initial and current
- (10) Presence of associated injuries, such as burns and trauma
- (11) Decontamination status
- (12) Treatment rendered or in progress
- (13) Patient response to treatment(s)
- (14) Estimated time of arrival

4.3.4 Identifying the Role of the BLS Responder.

4.3.4.1 Given scenarios involving hazardous materials/WMD, the BLS responder shall identify his or her role during hazardous materials/WMD incidents as specified in the emergency response plan and SOPs developed by the AHJ, as follows: