

Protecting the Protectors

Best Practices for Protecting EMS Responders

It's almost a classic story: The heroes attempt to save the victims from the forces of evil, but then, while carrying the wounded to safety, they themselves fall victim to those same forces of evil. In today's world, the heroes are the emergency medical services (EMS) responders whose job is to transport victims to where they can get medical care. The forces of evil are hazardous substances releases. The dilemma is how to protect EMS responders from the same hazardous substances that have contaminated the victims.

Several years ago, the Occupational Safety and Health Administration (OSHA) published a document offering guidance for health care facilities that receive and treat victims of hazardous substances releases. At the request of the stakeholders who helped create that document, OSHA has now published *Best Practices for Protecting EMS Responders*—a guide targeted at employers of EMS responders who provide medical assistance during an incident involving a hazardous materials release. This guide discusses the measures employers need to take to keep their EMS responders safe.

"In this guide, the term *EMS responder* refers to all levels of emergency medical personnel who are involved with incident response, such as EMTs and paramedics," says Reginald J. Richards, Dr.Ph., C.I.H., senior safety and health specialist at OSHA's Office of Emergency Management and

Preparedness. "Although many EMS responders such as EMTs and fire fighters are cross-trained, the guide applies to those workers only when they're functioning as EMS responders."

Richards believes that employers of EMS responders will find this document useful in identifying and assessing hazards and in developing emergency response plans. "The purpose of this guide is to establish best practices that EMS employers can implement to help EMS responders save lives without becoming victims themselves," he says.

Richards points out that emergency response operations can be a dangerous occupation. "In their jobs, emergency responders face a wide range of serious hazards that place them at high risk for occupational injury or death," he says. "This risk is mitigated when they use various forms of personal protective equipment (PPE), such as protective garments, respiratory protection, and environmental monitoring and communications equipment, along with practices and protocols that focus on safety."

The guide addresses the safety of emergency responders by examining the hazards and needs that members of the emergency responder community regard as most important. The findings are based on in-depth discussions with 190 members of the emergency response community around the country, including structural firefighters, EMS responders, police officers, emergency manage-

ment officials, technology and services suppliers, researchers, and program managers from 83 organizations nationwide.

This 100-page guide is available for download at <http://www.osha.gov/Publications/OSHA3370-protecting-EMS-respondersSM.pdf>. The guide addresses the following topics:

- EMS responder role in community response
- The EMS hazard assessment
- EMS responder preparation as part of an effective emergency response plan
- EMS responder roles requiring Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training
- PPE
- Best practices for pre-transport patient decontamination


Note that this best practices guide isn't intended to advise other responders such as fire fighters or police when they perform work beyond the duties of an EMS responder. The guide's recommendations are best suited for individuals for whom providing medical care is a primary mission. Others may benefit from these recommendations but might also need to have additional training that expands their capabilities during emergencies involving hazardous materials.

"We at OSHA acknowledge the dynamic tension that exists between the need to provide expedient medical treatment, including taking patients to a site where they can receive more advanced care and the need to protect medical care

providers,” says Richards. “This guide focuses on reasonably anticipated worst-case scenarios with the understanding that these situations will be relatively rare. Nevertheless, the associated preparation will benefit employers and EMS responders any time patients require emergency medical assistance at the scene of a hazardous substance release.”

Richards stresses that responders should be equipped and trained based on the tasks they are expected to perform. “If not, either they shouldn’t perform the task or they should get the appropriate training and equipment so they can perform the tasks,” he says. He also advises that using PPE shouldn’t be the first recourse for workers. “There are potential hazards,” he cautions. “For example, an air-purifying respirator that uses a cartridge can become saturated and clogged with hazardous material. In addition, the respirators that are selected must use the correct cartridge or filter for specific hazards.”

Richards points out that using full protective gear, such as an encapsulating suit and respirator, can increase the risk of injury from other hazards, such as thermal stress. “However, if the PPE is properly selected and used correctly, it can augment other types of control, such as engineering or administrative controls, to ensure comprehensive protection of EMS responders,” he states.

“No two responders are the same, and no two situations are the same,” Richards continues. He maintains that employers should conduct an assessment to identify the hazards and the risks associated with those hazards, then provide training and equipment to ensure the safety of responders while performing their specific tasks. “The bottom line is that the responders who provide rescue in hazardous areas should be those who are properly trained and equipped to do so,” he says. 

Basic Decontamination Steps

Reginald J. Richards, Dr.Ph., C.I.H., senior safety and health specialist at OSHA’s Office of Emergency Management and Preparedness, believes that EMS responders will find the following review of basic decontamination steps helpful:

1. Activate the emergency decontamination plan.
2. Learn as much as possible as soon as you can about the location of patients, the contaminant, its hazards, and associated symptoms. Make arrangements with other first responder agencies to improve how information flows to responders.
3. Arrange for decontamination equipment to be delivered to a suitable location. Some systems are heavy and cumbersome; in addition to the need for an adequate area of relatively level ground, consider factors such as vehicular access to deliver equipment and also eventually to provide ambulance service for patients who require it.
4. Activate the decontamination system and assemble the decontamination team. These individuals should be pre-designated in the community plan so that they will have been properly trained and have drilled with the available equipment prior to the emergency. Also in advance, the community should consider the need for staffing multiple decontamination lines (for responders, ambulatory patients, and nonambulatory patients; or males and females), which can increase patient compliance and/or process efficiency. Consider by whom and where decontamination for critically ill/injured patients will be performed.
5. Perform any medical monitoring (such as vital signs) of decontamination team members, if specified by the community or EMS agency plan.
6. Put on PPE.
7. Triage patients to determine which individuals require decontamination and provide critical medical treatment to stabilize them before decontamination.
8. Direct or assist patients, both ambulatory and nonambulatory, in removing contaminated clothing and securing personal property as soon as possible, preferably within minutes of arrival.
9. Place clothing and other contaminated items in a plastic bag that can be sealed; or, when available, place items in an approved hazardous waste container and cover it. Make sure that waste bags/containers are isolated and remain outdoors so that the items are not an ongoing source of exposure.
10. Perform gross decontamination with water (extensive amounts, if available), such as from a hose. More time-consuming technical decontamination may be necessary to completely remove contaminant. This more thorough decontamination procedure involves washing patients using soap with good surface-active properties (that is, soap that helps oil dissolve in water) and water—preferably tepid water to improve patient compliance. Pay particular attention to the back and hair on the head or body. If possible, make sure that hair wash water falls away from the body. Never rub or irritate the skin; remove all obvious contamination on a patient with gentle blotting or brushing. Avoid abrasive materials such as gritty soaps. This step should also include copious rinsing, especially when dealing with acids or bases. Ambulatory patients may be able to clean themselves under the direction of the decontamination team.
11. Inspect patients to evaluate the effectiveness of decontamination. Guide decontaminated patients away from any possible recontamination and toward the medical treatment area. Return inadequately decontaminated patients to the shower area and repeat cleansing.
12. If it’s not disposable, decontaminate equipment and the decontamination system.
13. Decontamination team members should remove PPE and decontaminate themselves. The order in which PPE is removed during responder decontamination can help minimize additional exposure.
14. Patient inspection provides a final check to ensure that contaminant is not carried into clean areas.

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