

Objective #12 Emergency Medical Services Demonstrate, or discuss in a tabletop exercise, the adequacy of procedures and/or guidelines, facilities, and equipment to handle, treat, and transport victims involved in a hazardous materials incident.

A Basic Intent

It is crucial for responders to identify to what extent the released materials have contaminated the victims. Medical personnel will then need to outline what steps will be taken to safely rescue and treat the contaminated victims versus those not contaminated. Throughout, medical personnel will need to minimize the possibility of exposure to themselves or their equipment.

B Discussing the Points of Review

1. *Were proper procedures demonstrated by EMS personnel to safely approach the scene?*

Medical personnel may in fact be the first on-scene. As such, they should demonstrate that they recognize the presence of hazardous materials. Personnel should not commit resources until it is determined where it is safe to operate, which victims require decontamination, and what protective equipment is required.

2. *Were EMS operations effectively coordinated on-site and with the command staff?*

The IC should designate an EMS officer to take charge of EMS operations. The EMS officer should clearly identify or be briefed on what hazards are involved. In turn, the EMS officer should ensure all EMS personnel understand the hazards, where it is safe to work, and what precautions should be taken while handling victims. The EMS officer will be responsible to establish the medical priorities to include where to receive victims, how to separate contaminated from non-contaminated people, where to stage equipment for use, and how to account for medical safety on-site. This requires close coordination with the Operations and Safety officers. EMS personnel should also designate a squad to directly support the Hazmat Team and/or entry/decon personnel.

3. *Were the health hazards and the secondary contamination risks posed to patients identified by responders?*

Exposed victims may or may not be contaminated. EMS will need to coordinate with Operations to identify the extent of contamination for each victim. EMS personnel should also understand what type of decontamination was provided. EMS personnel need to understand the likelihood of a secondary exposure or contamination. EMS personnel will need to research these issues using tools beyond the DOT guidebook. Tools/resources can include computer technology-based programs (i.e. Cameo), shipping papers, SDS, pre-planned hazard analyses, chemical handbooks (i.e. NIOSH pocket guide, or chemical specialists (i.e. Chemtrec). Assistance can also come directly from the spiller or company that uses the material, hazmat team members, or from the local medical facility and/or health department.

4. *Were adequate medical equipment and supplies identified and/or obtained to support EMS operations?*

As EMS personnel establish their medical priorities, they should determine what medical assets are needed on-scene. EMS personnel shall determine what PPE are appropriate to receive, handle, treat, and transport victims. They should recognize the limitations work uniforms and structural fire gear provide in preventing contamination. Contamination controls may require lining the interior of squads with plastic, donning Tyvex suits, or using body bags to wrap victims for transport. EMS personnel may also need basic medical supplies such as additional backboards to move contaminated victims. This requires EMS personnel to understand the hazard, what precautions to take, and thus what resources are need to minimize the hazard. EMS personnel also need to determine what equipment is or may become contaminated and thus will need to secure replacement supplies.

5. *Were existing/established medical triage procedures properly implemented to address the contamination risk, if present?*

Victims may or may not be recovered by EMS personnel. Rescuers/entry personnel who are assisting EMS need to be briefed on how to conduct triage. They should know the likely routes of entry, the signs and symptoms of exposure, and whether injuries or chemical exposure takes precedence in recovery. EMS may complete the medical triage for the walking wounded who have received a gross decontamination.

6. *Were patients decontaminated before being treated and appropriate steps taken to prevent exposure/secondary contamination?*

Decontamination will be required for those exposed or contaminated. The amount and type vary on the materials involved and the type/length of exposure. EMS personnel should know which victims required decontamination, and what type they received before treating them. Then in preparation to transport victims, EMS personnel should note whether or not the squads require protection from possible secondary contamination. Techniques include using plastic sheeting to line the inside of the squad or to fully wrap the victim. Personnel may want to only use one or two squads to shuttle the decontaminated victims to the medical facility. This will leave other vehicles clean and able to transport those who were not contaminated. As a side note, EMS personnel may decide to transport victims via air ambulance. In this case, EMS personnel should be aware that some carriers will not transport victims who have been contaminated with either a flammable or poison. And it does not matter how extensive the decontamination was. EMS personnel should be familiar with their local carrier's restrictions when determining who will be airlifted.

7. *Was the Medical Facility notified prior to patient arrival that a hazardous material incident had occurred to include information on the respective health hazards?*

The Evaluator should note who, how, and when this notification occurred. The notification may be made by on-scene personnel, through dispatch personnel, or only via EMS squads after they are enroute to the facility. It should also be noted if the medical facility monitored response radios to learn of the emergency. In this case, the facility could be proactive and directly contact responders instead of waiting for an "official" notification. The notification should include the identity of the chemical involved and an estimate of the injuries to include chemical exposures. If the Medical Facility does not have adequate information about the hazards, they should request it from the IC. Information should include specifics on routes of entry, length of exposure, health symptoms, decontamination needs, etc.

8. *Did personnel coordinate with medical facilities to receive patients to include providing information on decontamination and potential walk-ins?*

EMS personnel should understand which facilities locally can or cannot handle victims involved in a chemical incident. These facilities may include those that exist outside of the County. EMS personnel should make contact with each medical facility to ensure they can accept the victims or determine they should go to an alternate site. EMS personnel should brief the medical facilities on what chemicals were involved, what contamination occurred, what decontamination occurred, along with basic patient information. This information should be provided before the patient leaves the scene. This will give medical facilities time to prepare their people and equipment. EMS personnel should also confirm which entrance they should use to deliver the patients to the medical facility. Some sites may require contaminated victims to arrive at a specific entrance. This should be pre-planned but should be confirmed while on-scene or relayed to squads while enroute. This function is sometimes handled by dispatch centers if on-scene personnel request it.

9. *Were emergency medical personnel and equipment screened for contamination before returning them to service or were arrangements made to secure other assets?*

Upon arrival, the EMS personnel should be checked for signs of exposure and possible contamination. EMS personnel should request the medical facility to quickly screen them for symptoms of exposure before they return to service. If symptoms are present, EMS personnel should be held for treatment and observation. In this case, they need to advise the IC or the on-scene EMS Officer that they are out of service. The command system will need to take steps to secure additional assets.

10. *Were records kept to document resources expended and response actions taken?*

To assist in coordinating EMS operations, the EMS liaison should document various items. NFPA's 473 standard notes that this information should include product information, extent and duration of exposures, actions taken to limit contamination, treatment rendered, and patient disposition. Personnel should also note what resources were contaminated and expended. This documentation should help to prioritize medical needs, manage safety concerns, recover costs afterwards, critique operations, and identify training needs.

11. *Were the actions taken based on existing plans and/or operating procedures?*

Overall, these actions are required to be contained in the LEPC plan. These procedures and/or guidelines may also be outlined in department SOPs.

C Exercise Design and Control Issues

This Objective requires the exercise scenario to have sufficient numbers of victims with varying degrees of exposure, contamination, and injury. The scenario must involve the victims becoming contaminated.

For Tabletop exercises, the exercise Controller will need to outline the injuries of each victim so the Players can respond accordingly. The Controller should provide victim information for a

few patients at a time to reflect the reality of how many victims can/will be extricated from an actual scene. For example, the initial response may generate a half dozen walk-out victims and two victims who were carried out, later four more are brought out, and still later two more are brought out. Do not give the status of all the victims at the onset of the exercise. This will facilitate a more thorough discussion of response operations and the coordination between entry, decon, and medical facility personnel with EMS personnel.

For Functional or Full-Scale exercises, there will need to be ample victims to fully test available EMS. Victims should be moulaged or wear tags that identify the subtle signs of chemical exposure. Exercise Controllers may need to tell the EMS provider about the victim's injuries if the moulage or tags are not immediately clear. There should also be a good mix of injuries and levels of contamination. Some victims should be able to walk clear of the scene with minimal exposure while others heavily contaminated needing immediate rescue. Again, there should be enough victims who can survive and be treated by response personnel.

This Objective is typically tested along with Objective #7, Response Personnel Safety. This allows fire personnel to setup a decontamination line and extract the victims for EMS personnel. However, this Objective can be completed without using the other Objective. In that case, victims are prepared as if they have just completed decontamination or have come directly out of the hazard area. Controllers directly control the flow of victims to the EMS sector. The Controllers will have to address any questions EMS personnel have and would expect the decontamination or safety personnel to answer.

Victims should be prepared to actually be decontaminated by First Responders. This means they should wear clothing that can be removed or cut from the body. A bathing suit is usually worn under the clothing to permit washing during the decontamination, but only if temperatures permit. Do not risk hypothermia if conditions do not permit. Dry clothing should be pre-staged on-scene or available at the receiving medical facility to allow victims to change after their role is complete. The exercise team should also make arrangements to pick-up and/or return victims who were transported to a medical facility from the scene.

D Evaluation Needs and Issues

The Evaluator for this Objective should be an EMS provider and preferably trained to the Operations level. This individual should also be familiar with the ICS. The Evaluator will evaluate actions from where EMS personnel establish triage operations. The Evaluator should observe how EMS personnel identify the hazards and how they determine what actions should be taken to safely work in the area. The Evaluator should also pay attention to how EMS personnel interact within the command system.

This Objective can be evaluated along with Objectives #2, 7, and 13. It is encouraged that the evaluator first observe on scene activities, then ride along with a squad to the receiving facility to observe the intake process and see how the EMT's are received.