



# Video User's Guide

## Pre-hospital Practices for Handling a Radiologically Contaminated Patient

### DISCLAIMER

Viewing this video and completing the enclosed printed study material do not by themselves provide sufficient skills to safely engage in or perform duties related to emergency response to a transportation accident involving radioactive material. Meeting that goal is beyond the scope of this video and requires either additional specific areas of competency or more hours of training than will be presented in this video. The techniques demonstrated in this video are generic in nature and are intended as guidance for the development of standard operating procedures specific to your agency. Responders working in jurisdictions having specific procedures should follow their jurisdiction's procedural requirements. This video is one of many available resources designed to enhance your existing emergency response program's radiological material response capabilities. Emergency responders are advised to participate in hazardous material training as required by OSHA 1910.120 and respond in accordance with their level of training and local procedures, to protect people and the environment.



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### PURPOSE

This video will assist appropriately trained emergency medical service responders in developing an understanding of the actions involved in response to a transportation accident involving hazard class 7 (radioactive) material. It will also demonstrate guidelines for packaging, treating, and transporting injured patients.

### VIDEO OVERVIEW

This training video will demonstrate generic medical practices on how to properly handle and manage patients contaminated with radioactive material. The techniques demonstrated in this video are generic in nature and are in no way intended to replace your local response procedures. Understanding these techniques will help you, as a responder, function with confidence during incidents that involve radioactive material.

This video will show responders' arrival, size-up, protective clothing considerations, victim rescue, treatment, decontamination techniques, and transport to a medical facility. This video also emphasizes the importance of using the Emergency Response Guidebook (ERG) to determine responder actions for response to a transportation accident involving radioactive material.

### HOW TO USE THIS GUIDE

The purpose of this User's Guide is to provide instructors with an overview of the key points covered in the video. The Student Handout portion of this Guide is designed to assist the instructor in reviewing those points with students. The Student Handout should be distributed to students after the video is shown and the instructor should use the Guide to facilitate a discussion on key activities and duties at the scene.



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**First Aid actions outlined in the Emergency Response Guidebook, or ERG, include:**

- Medical problems take priority over radiological concerns at a radioactive material incident
- Use first aid treatment according to the nature of the injury
- Do not delay care and transport of a seriously injured person

**Universal precautions protective clothing worn by emergency care providers will provide protection from radiological contamination hazards. A typical universal precaution protective clothing kit includes:**

- Disposable coverall or gown
- Shoe covers
- Head cap
- N-95 airborne pathogen tuberculosis mask. This type of mask provides some protection against airborne radioactive material. For work inside the hot zone, or areas where higher levels of radioactive contamination are suspected, use of additional respiratory protection is suggested
- Glasses with side shields
- Gloves, it is recommended that emergency care providers wear multiple pairs of gloves



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**Response to a transportation accident involving radioactive material with injured persons requires an on-scene assessment and triage of the injured. Some examples of assessment and triage considerations include:**

- Determine how many patients are present and if patients are ambulatory or non-ambulatory
- Decide whether a rapid extrication is necessary or if there is time to perform field decontamination before transport
- Follow local medical treatment protocols when identifying patient priority during triage. In cases where multiple patients are present, the use of the mass casualty triage and tagging system may be necessary

**Conditions you should look for to determine if the victim has life-threatening injuries and immediate transport is necessary include:**

- Unconscious or altered mental status
- Respiratory arrest or distress
- Severe hemorrhage, that can not be controlled on-scene
- Poor perfusion or associated signs and symptoms of shock







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**Consider the following when performing invasive airway treatment:**

- Intubation should not be performed in the hot zone unless unable to secure airway by other means
- Take protective measures not to introduce inhalation hazards to the patient
- Remove outer gloves prior to intubation

**Consider the following when performing intravenous cannulation:**

- Take protective measures not to introduce hazards intravenously
- Cleanse the selected site thoroughly using alcohol or betadine
- Remove outer gloves prior to intravenous cannulation

**It is important to notify the hospital early because it allows the hospital time to prepare to receive the patient. Remember the following:**

- Give a brief but informative description of patient's condition
- Alert hospital of possible contamination and material involved
- Identify number of patients involved in the incident
- Transport patient to the appropriate medical facility
- Consult with hospital staff for any specific arrival instructions including alternate arrival entrance, hospital radiation safety support, and unloading of the patient
- At the hospital, the ambulance is met outside the emergency entrance by hospital staff









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- Unless needed back at the accident scene, bag contaminated items, secure the ambulance stretcher and transport vehicle, remove gloves and remain in the controlled area. To prevent the possibility of internal contamination, do not eat, drink, smoke, or chew.
- Return to regular service only after being surveyed and decontaminated if necessary.

### **Additional Resources and Information**

The Department of Energy (DOE) and the Federal Emergency Management Agency (FEMA) have developed and offer various training programs for preparing responders for response to an incident involving radioactive materials. FEMA, through its Emergency Management Training Institute, offers several Independent Self-Study programs. These training programs can be accessed through the FEMA web site at <http://www.fema.gov>. The DOE, through the Office of Transportation and the Transportation Emergency Preparedness Program (TEPP), also offers additional information for preparedness. Training programs and planning tools are offered through the TEPP web site at <http://www.em.doe.gov/otem>. The planning tools include various model procedures, drill scenarios, and an assessment document to determine preparedness for response to a transportation accident involving radioactive material.



# Video User's Guide



## Student Handout

What First Aid actions are outlined in the Emergency Response Guidebook, or ERG?

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Universal precautions protective clothing worn by emergency care providers will provide protection from radiological contamination hazards. A typical universal precaution protective clothing kit includes:

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Response to a transportation accident involving radioactive material with injured persons requires an on-scene assessment and triage of the injured. List some examples of assessment and triage considerations:

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What conditions should you look for to determine if the victim has life-threatening injuries and immediate transport is necessary?

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What treatment considerations should be made for life-threatening conditions?

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**If a victim has non-life-threatening injuries identify some items that should be considered:**

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**What steps can be taken by EMS personnel to minimize the spread of contamination inside the ambulance compartment during patient transport?**

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**Identify several considerations when performing invasive airway treatment:**

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**Identify several considerations when performing intravenous cannulation:**

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Early notification to the hospital is important because it allows the hospital time to prepare to receive the patient. Identify several considerations:

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List proper procedures for returning personnel, equipment, and vehicles to service:

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Remember these points:

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# Pre-hospital Practices for Handling a Radiologically Contaminated Patient



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This video was produced as a cooperative effort between the Federal Emergency Management Agency (FEMA) and the Department of Energy (DOE) Transportation Emergency Preparedness Program (TEPP). For more information on FEMA and DOE training resources, visit the FEMA website at <http://www.training.fema.gov> and the DOE TEPP website at <http://www.em.doe.gov/otem/program.html>.

