**Hazardous Materials: Managing the Incident, Fourth Edition**

**Chapter 11: Decontamination**

**Chief Concepts**

* Decontamination is the process of making people, equipment, and the environment safe from hazardous materials contaminants. The more you know about how contamination occurs and spreads, the more effective decontamination will be.
* The basic concepts of decontamination are relatively simple. If contact with the contaminant can be controlled and minimized, the need for decontamination can be reduced.
* Decon needs to be an adaptive and flexible process that respects the hazards and the behavior of the contaminants, as well as human behavior under stress. The hazards and risks presented by the incident will define the scope, nature, and complexity of decon operations.
* Contamination is any form of hazardous material (solid, liquid, or gas) that physically remains on people, animals, or objects.
* Direct contamination occurs when a person comes in direct physical contact with a contaminant or when a person comes into contact with any object that has the contaminant on it (e.g., contaminated clothing or equipment).
* Cross-contamination occurs when a person who is already contaminated makes contact with a person or object not contaminated. Cross-contamination is typically the result of poor site management and control, inadequate decon and site safety procedures, or a failure to follow safety procedures.
* Exposure means that a person has been subjected to a toxic substance or harmful physical agent through any route of entry into the body (e.g., inhalation, ingestion, injection, or by direct contact [skin absorption]).
* The safety and health hazards of the contaminants at any incident will define how complex decon operations will be.
* The best field decontamination procedures emphasize the need to confine contaminants to a limited area. Establishing a designated decontamination corridor and decontamination area are the first steps in limiting the spread of contaminants.
* There is no universal decon method that will work for every hazmat incident or release. Regardless of the number of decontamination steps required, decontamination is most effective when it is carried out by a trained Decontamination Team using multiple cleaning stations.
* The pathway is from the Hot Zone into the decon area, with the exit point near the Warm Zone/Cold Zone interface. The decontamination corridor should be clearly marked.
* Decon is a labor-intensive operation. When setting up the decon area, consideration must be given to the staffing of the decon operation and the safety of the Decon Team.
* Multistep decon operations can be broken into two broad phases: gross decon and secondary decon. Gross decon is the initial rinse and secondary decon is the follow-up process that removes the contaminants to a safe and acceptable level.
* Emergency decontamination is the physical process of immediately reducing contamination of individuals in potentially life-threatening situations with or without the formal establishment of a decontamination corridor.
* Emergency decon can be innovative, but the most important concept is to clean the contaminated person as soon as possible. Remember the basics—FLUSH—STRIP—FLUSH. Soap and water is a near-universal solution and should be applied in large quantities. When acids or bases have contacted bare skin, the minimum amount of time for a water flush is at least 20 minutes.
* Technical decon is a multistep process in which contaminated individuals are cleansed with the assistance of trained personnel.
* Mass decontamination is established when large numbers of people (i.e., civilians or responders) need to be decontaminated at the scene of a hazmat emergency. The general goal is to provide the greatest good to the greatest number of people in the shortest amount of time.
* A debriefing should be held for those involved in decontamination and clean-up as soon as practical. Responders and contractors involved in the operation should be provided with as much information as possible about any delayed health effects of the hazmats.