Using Risk Assessment in Chemical Emergencies to Protect Public Health

Instructor: Jay Gandy, PhD

This course will give some familiarity about Risk Assessment to Public Health officials who may rely on risk assessments performed by others in making decisions to protect communities. This course will also introduce the underlying approaches, assumptions and uncertainties of Risk Assessment. Finally, it will demonstrate how the principals of Risk Assessment can be used to protect communities during an emergency chemical release. The topics covered in this course include:

Learning Objectives

Module 1: Introduction and Basic Principals of Chemicals and Health
- List basic concepts of how chemicals induce adverse effects as they relate to Risk Assessment
- Define terminology
- Describe how dose-response data might be used to assess safety or risk
- Name factors that might alter a chemical’s toxicity or the dose-response relationship
- Describe basic methods for extrapolating dose-response data when developing exposure guidelines of public health interest

Module 2: Introduction to the Concepts of Risk Assessment
- Describe the approaches and components of a Risk Assessment
- Differentiate Risk Assessment and Risk Management
- Describe how Risk Assessment is used in the practice of Public Health

Module 3: Introduction to Risk Management – Applying Risk Assessments to Protect Public Health
- List the basic principals of Risk Management
- Describe the appropriate application of Risk Assessments for Risk Management
- Name the components of making good Risk Management decisions

Module 4: Protecting Public Health during an Emergency Chemical Release
- List types of hazards that may exist at an emergency chemical release
- Describe general approaches to insuring that the public is protected from the perspective of the Public Health official
- Explain the essentials of air monitoring around an emergency chemical release
- List how Public Health officials can assist the incident commander during an emergency

Module 5: Potential Action Lives for Airborne Contaminants in a Chemical Emergency
- Explain why action levels may need to be established for the chemicals of concern during an emergency chemical release.
- Explain why several organizations have set air concentrations for many chemicals that may be levels of potential health concern for various exposure periods.
- List the different types of action levels that exist and the organizations that provide them.
- Describe the different types of exposure scenarios and the appropriate action level that may apply.
Module 6: Applying Risk Assessment Methods in an Accidental Chemical Release
- Describe a risk assessment approach when an acceptable exposure level does not exist.
- List factors that may influence how one takes environmental samples for analysis of potential chemical of concern after a chemical release.
- Describe approaches to setting risk-based action levels for chemical residues that may exist after a chemical release.

Module 7: Chemicals, Risks and Terrorism
- Describe the possible types of chemicals that may be used in a chemical terrorist event.
- List common industrial chemicals that are likely agents for a chemical terrorist event.
- List types of targets of a chemical terrorist event.

Competencies
- Describe the chain of command in emergency response
- Recognize unusual events that might indicate an emergency and describe appropriate action (to activate response plan)

* Bioterrorism and Emergency Readiness

To register for this course visit us at
http://lms.southcentralpartnership.org/scphp