

Preparedness in the Southwest Course

Module 3: Epidemiology of Biological, Chemical and Radiological Incidents

Following the terrorist events of 2001, the national and global menace of terrorism has created an intense fear of the unknown. The impacts of radiological, chemical, and biological events have the potential to endanger human life, wildlife, and the environment at a very large scale. Furthermore, as we learned in the aftermath of the World Trade Center terrorist attacks and the intentional release of anthrax, these events have the potential to cripple our response system and cause significant economic burden. This fear is further compounded by the fact that such events may occur in a covert manner and can cause significant morbidity and mortality before they are detected. This increased risk to the welfare of the public is an extreme concern to the field of public health.

This module will provide an overview of the three main categories of agents posing a threat to the public including Chemical, Biological, and Radiological (CBR). It will present epidemiological indicators and present strategies that will help public health officials prepare a cohesive response to an incident involving any of these types of agents.

Learning Objectives:

1. Describe the importance of surveillance systems in responding to a Chemical, Biological, and Radiological incident.
2. Describe the public health role in Chemical, Radiological, and Biological incident preparedness.
3. Identify at least three reasons why biological organisms are used for spreading terror.
4. Describe the epidemiologic differences between naturally occurring and intentional disease outbreaks.
5. Identify epidemiologic indicators of a Chemical, Biological, and Radiological incident.
6. Describe the different types of radiological incidents that may occur and the public health role in response.

CDC Core Competencies addressed:

Competency 1: Describe the public health role in emergency response in a range of emergencies that might arise.

Competency 2: Describe the chain of command in emergency response.

Competency 4: Describe his/her functional role(s) in emergency response and demonstrate his/her role(s) in regular drills.

Competency 6: Describe communication role(s) in emergency response.

Competency 8: Recognize deviations from the norm that might indicate an emergency and describe appropriate action

Target Capabilities:

WMD/Hazardous Materials Response and Decontamination

Public Health Epidemiological investigation and Laboratory Testing

CBRNE Detection

Food and Agriculture Safety and Defense