

Introduction to Public Health Risk Assessment

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Goals for this lecture

- To discuss environmental and occupational health applications for risk assessment - Why is this a useful tool?
- To understand the basic steps of risk assessment – What data and other resources might they require?
- To gain familiarity with publicly available resources for conducting risk assessments – How can you rely on work that has been done to date by other reliable organizations or scientists?

What is Public Health

Risk Assessment: Why do we need it?

- Definition: Risk assessment is an analytical process for evaluating the nature, seriousness, and likelihood of health impacts that might be occurring or that could occur from possible exposures to harmful substances or activities
- Discussion:
 - Frequently, decisions need to be made about how to protect workers and the public from potentially harmful substances or activities
 - Risk assessment uses existing scientific information and methods to help decision makers understand what risks may be important and to make recommendations to limit the potential risks posed to worker or the public's health
 - Current risks
 - Potential future risks

The Risk Assessment Process

- **Hazard Identification**
 - Review key research to identify any potential health problems that a chemical or activity can cause.
- **Dose-Response Assessment**
 - Estimate how much of the chemical it would take to cause varying degrees of health effects that could lead to illnesses.
- **Exposure Assessment**
 - Determine the amount, duration, and pattern of exposure to the chemical or activity.
- **Risk Characterization**
 - Assess the risk for the chemical to cause adverse health effects in an occupational or general population.