Accessible version can be found here:
https://www.cdc.gov/nceh/hsb/elearning/toi/Mod1/

# Toxicological Outbreak Investigation Course

## Module One:

## Course Introduction and Overview

# Course Purpose

- Train public health staff to recognize and respond to an outbreak caused by a toxic agent
- Provide a refresher on outbreak investigation

# Toxic Agents



A toxic agent is any substance that arises from outside of the human body that can cause harm to humans.

There are millions of toxic agents in the world.

Toxic agents can be found in many different sources, including the food you eat, the water you drink, and where you work.

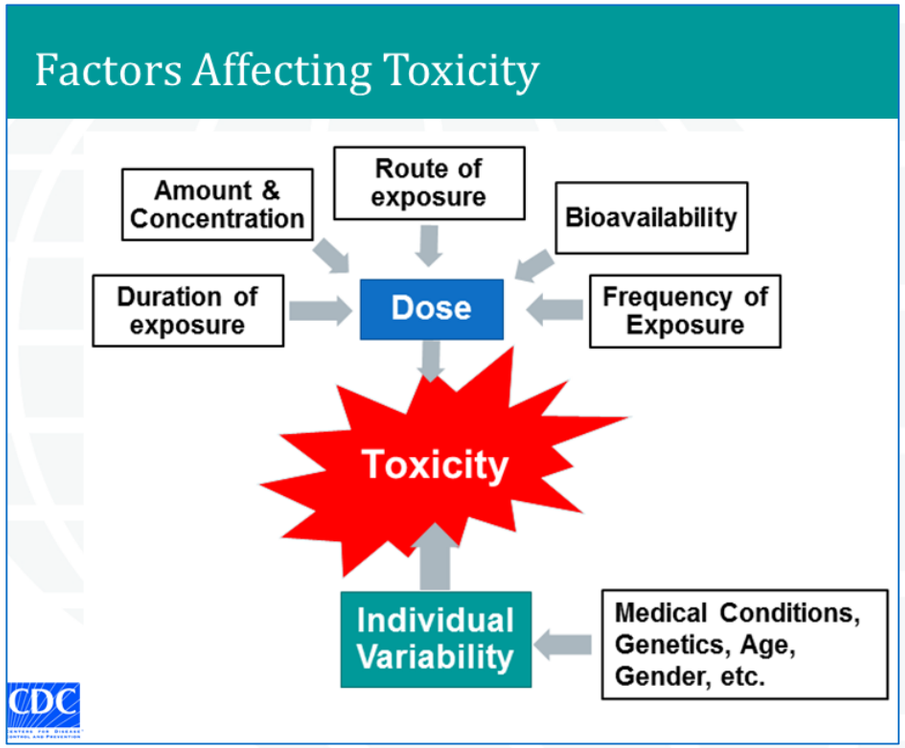
# Toxic Agents

**What are some toxic agents that have caused outbreaks that you know of and have responded to?**

# Course Modules

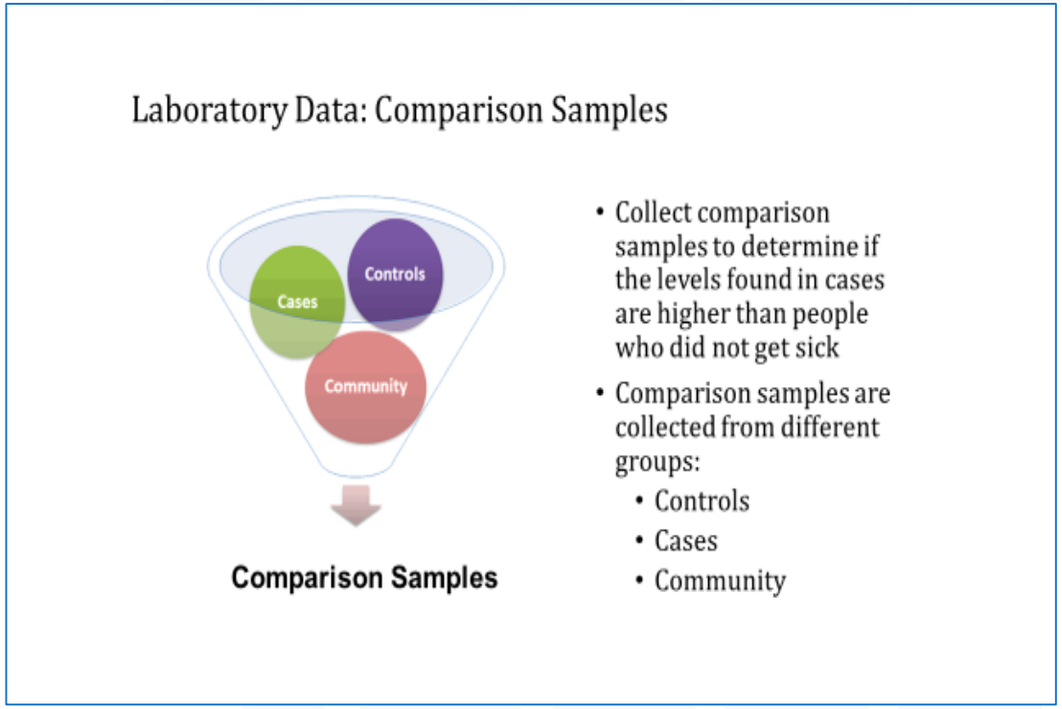
| Module | Title |
|---|---|
| 1 | Course Introduction and Overview |
| 2 | Toxicological Principles |
| 3 | Toxicological Laboratory Principles |
| 4 | Analyzing and Interpreting Laboratory Results |
| 5 | Steps of a Toxicological Outbreak Investigation |
| 6 | Case Study |

# Module 2: Toxicological Principles



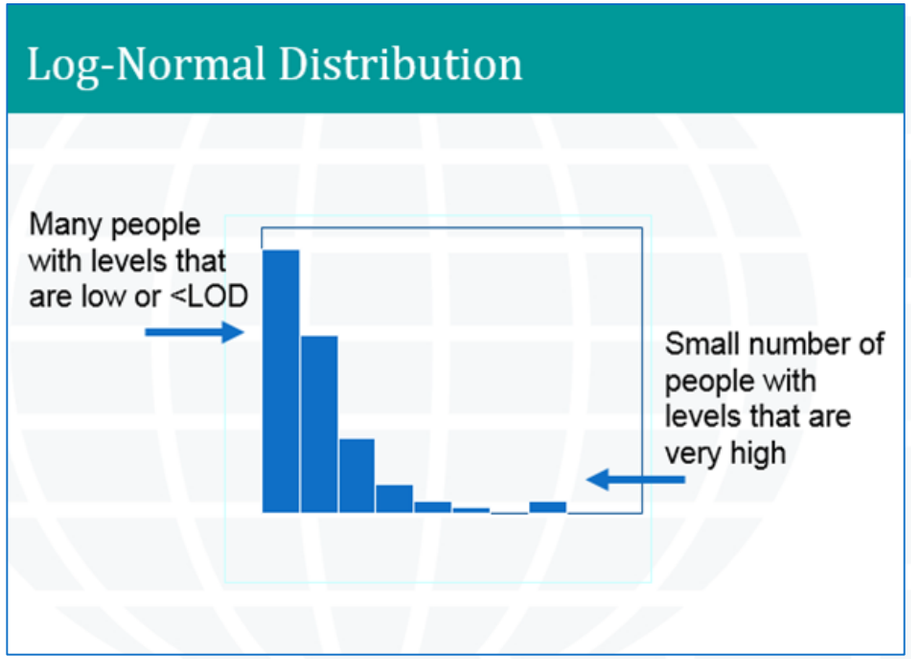

- Length: 60 minutes
- Content:
  - Characteristics of toxicological outbreaks
  - Routes of exposure
  - Factors affecting toxicity
  - Dose-response
  - Half-life

# Module 3: Toxicological Laboratory Principles



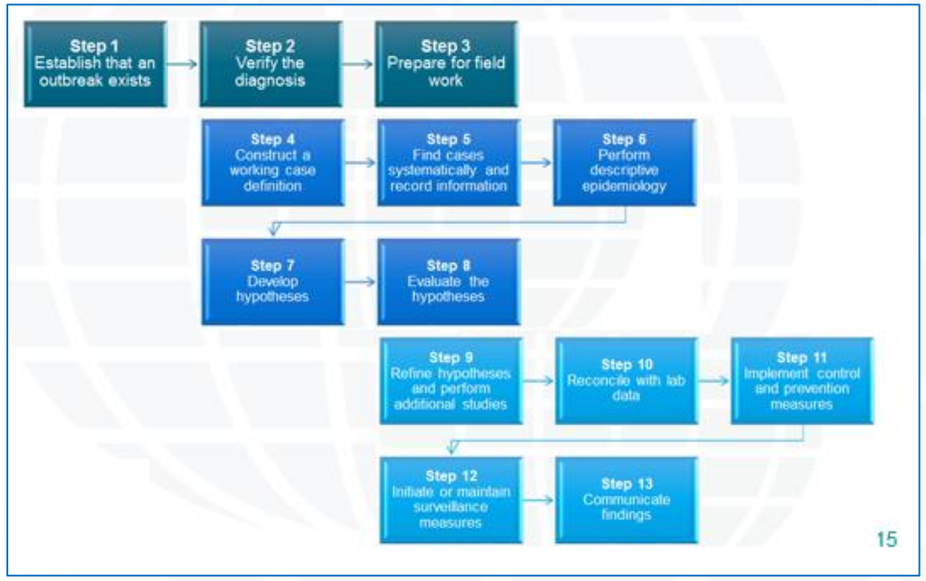

- Length: 60 minutes
- Content:
  - When to collect samples
  - Guidelines for collecting, transporting, and storing samples
  - Record keeping
  - Interpreting results

# Module 4: Analyzing and Interpreting Laboratory Results




- Length: 60 minutes
- Content:
  - Handling values below limit of detection (LOD)
  - Analyzing data that are not normally distributed
  - Interpreting results

# Module 5: Steps of a Toxicological Outbreak Investigation




- Length: 90 minutes
- Content:
  - Review and practice steps of an outbreak investigation
  - Modify tools based on scenario

# Module 6: Case Study

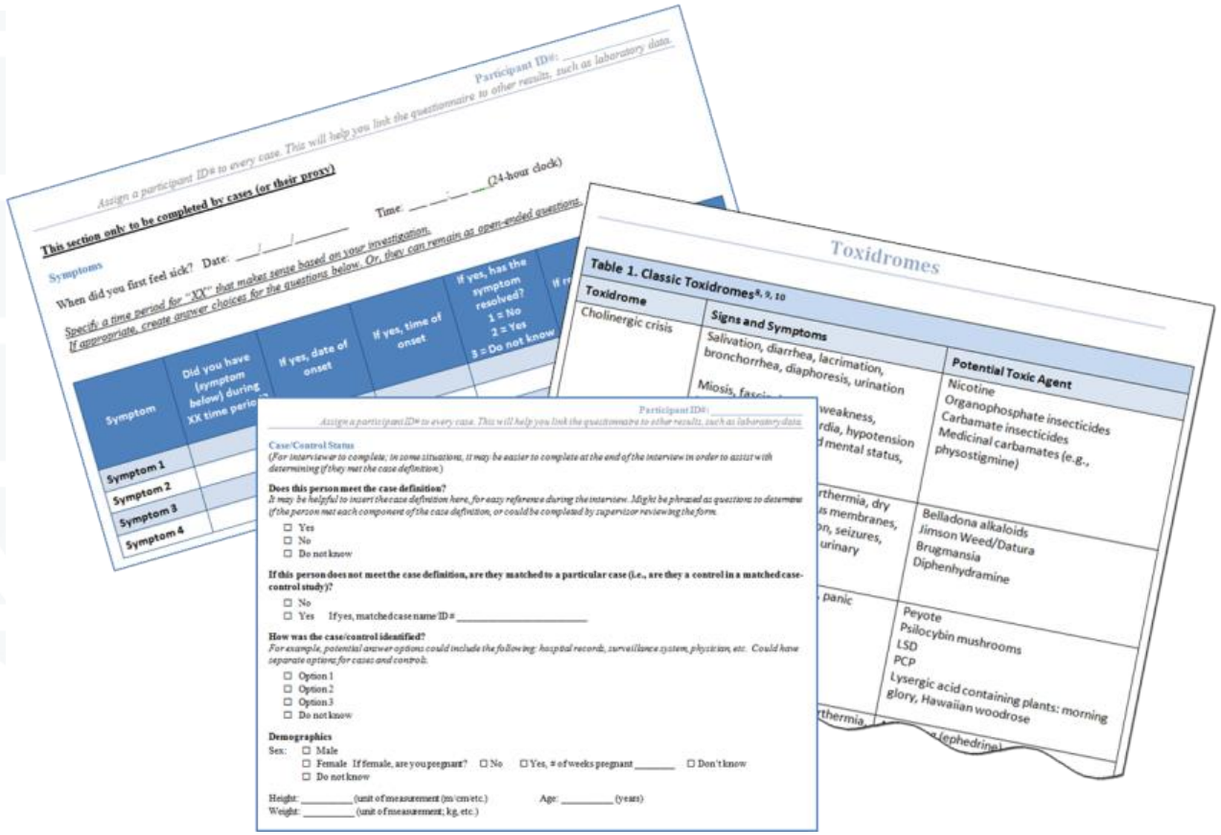
**Laboratory Results**

| Type of Sample | Carbofuran (µg/kg) | Diazinon (µg/kg) |
|---|---|---|
| Mud #1 | <LOD | <LOD |
| Mud #2 | <LOD | <LOD |
| Mud #3 | <LOD | <LOD |
| Mud #4 | <LOD | <LOD |
| Soil #1 | 68 | <LOD |
| Soil #2 | 0.8 | <LOD |
| Soil #3 | 417 | <LOD |
| Soil #4 | 0.3 | <LOD |

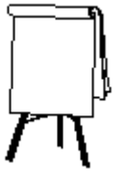
- Length: 60 minutes
- Content:
  - Apply steps of an outbreak investigation to a toxicological outbreak

# Tool Kit

Electronic, modifiable templates of commonly used forms




- Qualitative Epidemiological Questions
- Sample Line List
- Sample Log
- Sample Medical Record Abstraction Form
- Sample Questionnaire
- Toxidrome Chart



# Module Conclusion

**What questions do you have about the information presented in this module?**