



# Sample Collection

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**International**

BIOLOGICAL THREAT REDUCTION

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# Objectives

- Identify where law enforcement and public health may need to interact
- Consider hazards present in the scene and discuss how to identify these hazards
- List roles and responsibilities of sampling team
- Demonstrate the need to collect samples in a safe and secure manner
- Describe chain of custody



Sampling Strategy  
Development

Sample Collection

Sample  
Transportation

Sample Extraction

Sample Analysis

**Sampling activities**



# Sample collection planning

- How will you ensure personal and public safety?
- Define responsibilities
- Define criteria for initiating a response to a biological agent
- Identify who should be involved for sample collection
  - Different people needed for different scenes?
  - Staged involvement?
  - Appropriate and current training in hazardous materials?
  - Legal authorization necessary?
- Identify necessary equipment
- Identify and notify receiving laboratory



# Ensuring personnel and public safety

- Establish cordon area
  - Staging from a safe distance
  - Security
  - Demarcate hazard control zones (hot-warm-cold zones)



# Ensuring personnel and public safety

- Risk assessment
  - Identify the scene
    - Receive a briefing from the scene incident commander
  - Assess potential hazards
    - Environmental
    - Structural
    - Other
      - CBRNE
      - People
  - Develop a mitigation plan (site safety plan)
    - Who performs what activities in the hazard control zones (hot, warm, cold zones)?
    - Advice from outside experts can be valuable
  - Operational safety considerations
    - Trained in appropriate use of personal protective equipment





# Selecting a sampling team

- Training—what kind is necessary for the scene
  - Hazardous material handling
  - Personnel decontamination
  - Certification
- Expertise—what should they already know
  - Biological agents
  - Environmental screening
  - Sample collection
  - Decontamination and safe packaging
- Define roles—who does what
  - Assistant
  - Sampler
  - Note-taker/photographer



# Sampling collection considerations

- Risk assessment
- Location
  - Laboratory
  - Public spaces
- Confirmatory test needs
  - Sensitivity
  - Specificity
  - Reagents
- Material sampled
  - Sample processing
- Surface area
- Type of collection device
- Forensic needs
- Removing samples from scene





# Test selection

- Sample type
  - Clinical samples must represent the infected site
- Sample volume
- Collection devices
  - Swabs
  - Aspirates
  - Tissue
- Transportation conditions
  - Time
  - Temperature
  - Special Media



# Sample types small quantities of liquid

- Can pour into sample container
- Sterilized gauze pads can be used to soak up liquid and using sterile hemostat place in a sample container



# Sample types solids

- Do not fill containers to the top
- Dried powders may require a scoop
- Surface sampling includes swabbing, wiping, contact plates, and vaccumming
  - Swabs have limited surface area and may require a wetting agent
  - Wipes may be used with a hemostat



# Sampling procedures

- Only sample marked locations
- Complete one form per sample
- Do not reuse equipment
  - Equipment should be sterile
- Change outer gloves between samples
- Decontaminate outer packaging before removing from the scene



# Safe handling of samples

- Decontamination
  - Reduce exposures to potentially hazardous materials
- Proper packaging
  - Prevent additional exposures
  - Transportation regulations
  - Identify sample
  - Ensure integrity



# Secure transportation of samples

- Law enforcement chain of custody
- Sample logs
- Biosecurity principles





# Sample collection activity

- Review the scenario presented
  - Conduct a risk assessment to identify hazards present in the environment and
  - Define roles and responsibilities for the sample collection team
  - Develop a sampling strategy and identify rationale for sample collection
  - Gather materials necessary to collect sample
- Practice collecting a sample in the scenario
  - Use the SOP developed earlier



# Questions?



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