

**Detection and Identification**



Toxicity      Radioactivity      Chemical      Flammability

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**Objective**

**The Student will be able to:**

- Describe the types of detection and identification equipment available to the first responder

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**Detection and Identification Equipment (Chemicals)**



M-8 Paper      M256A1 Detector Kit      Dräger Tubes

MINICAMS® Gas Chromatograph      M-9 Paper      CAM

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**The Detection and Identification Equipment (Biologicals)**  
*(White Powder Jobs)*

**Credible vs non-credible threat**

Credible Threats should follow established State protocols



"SMART" Tickets

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**Radiological Survey Meters**



Survey Meter

Survey Meter

Dosimeter

Film Badge



Personal Pagers



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**Key Points**

**Chemical:**


- Must know signs and symptoms
- Without detection equipment, you cannot verify chemical agent
- No one kit detects all

**Biological:**

- Requires laboratory

**Radiation:**

- Easy to routinely do, and detectors are on hand

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**Anthrax**

**Route of entry:**

- Respiratory, cuts in skin, Ingestion.
- Incubation period: 1-7 days
- Contagious: No
- Mortality: 80%-90% (respiratory)
- Symptoms:
  - Nausea
  - Fever, chills
  - Swelling of lymph nodes



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**Anthrax Disease Course Summary (Inhalation)**

Day 1	Day 2	Day 3	Day 4	Day 5
EXPOSURE	Patient: ambulatory Incubation 1-6 Days			
Day 6	Day 7	Day 8	Day 9	Day 10
Incubation	Fever, malaise, fatigue, cough, mild chest discomfort, respiratory distress. SHOCK and DEATH near 100% mortality			
Day 11	Day 12	Day 13	Day 14	Day 15
Patient is Intubated				

DAAG-HCF 7 31 January 2001

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**Plague**


Route of entry:

- Flea bites
- Incubation period: 2-3 days

Contagious: **Yes**

- Mortality: 90%-100% (respiratory)
- Symptoms:
  - Headache, shortness of breath
  - High fever, chills
  - Spitting up blood



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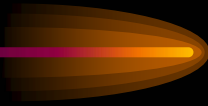
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**Q Fever**

Route of entry:

- Respiratory, digestive
- Incubation period: 2-10 days
- Contagious: **No**
- Mortality: Low (under 1%)
- Symptoms: Flu like



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**Small Pox**

Route of entry:

- Respiratory
- Incubation period: 10-12 days
- Contagious: **Yes**
- Mortality: 30%
- Symptoms:
  - Fever, rigors, vomiting
  - Headache, backache
  - Lesions (after 2-3 days)



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**Ebola**

- Route of entry: Direct contact
- Incubation period: 3-21 days
- Contagious: **Yes**
- Mortality: 90%
- Symptoms:
  - Fever, vomiting, diarrhea
  - Blotches on skin
  - Bleeding



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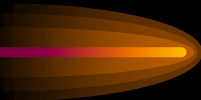
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**VEE**

**Venezuelan Equine Encephalomyelitis**

Route of entry:

- Mosquito bites, respiratory
- Incubation period: 1-5 days
- Contagious: **No**
- Mortality: 1%
- Symptoms:
  - Flu like



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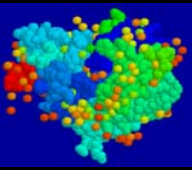
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**SEB**

**Staphylococcus Enterotoxin B**

Route of entry:

- Digestive, respiratory
- Incubation period: 4-6 hours
- Contagious: **No**
- Mortality: Low
- Symptoms:
  - Vomiting, abdominal cramps, explosive watery diarrhea (ingestion)
  - High fever, cough chills, prostration (respiratory)



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**Botulinum**

Route of entry:

- Digestive, respiratory
- Incubation period: 24-72 hours
- Contagious: **No**
- Mortality: 80%
- Symptoms:
  - Weakness, dizziness
  - Dry mouth and throat
  - Blurred vision



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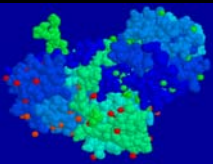
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**Ricin**

Route of entry:

- Digestive, respiratory
- Incubation period: 24-72 hours
- Contagious: **No**
- Mortality: High
- Symptoms:
  - Nausea, vomiting
  - Abdominal cramps, bloody diarrhea
  - Difficulty breathing



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