Airborne Viruses, Mold, and Bacteria

A Basic Understanding of Airborne Hazards for the Code Enforcement Officer in Georgia

Student Performance Objectives

1. Have a deeper understanding of airborne viruses, mold, and bacteria as it relates to Code Enforcement Officers.
2. Become aware of how Code Enforcement Officers contribute to the general overall health of the communities they serve.
3. Acquire a general knowledge of what to look for while performing their duties as Code Enforcement Officers as it relates to possible airborne viruses, mold, and bacteria.
4. Be aware of the coordination needed when working with the Department of Public Health or various other agencies.

Who’s Here and Why are We Here?

- Introductions
Who’s Here and Why are We Here?

- Introductions
- Unseen Hazards, Obvious Results
  - Public Safety meets Public Health
  - Officer Safety and Health
Who’s Here and Why are We Here?

- Introductions
- Unseen Hazards, Obvious Results
  - Public Safety meets Public Health
  - Officer Safety and Health
  - And a Little Crime or Terrorism

Our Areas of Information Today:

I. The Airborne Hazards We Face

II. Where Will We Face These Hazards?
Our Areas of Information Today:

I. The Airborne Hazards We Face
II. Where Will We Face These Hazards?
III. Risks and Routes
IV. Personal Protection
V. Public Health, Law Enforcement, & Homeland Security
I. The Airborne Hazards We Face

- Viruses
- There’s a Fungus Among Us
- Bacteria

Viruses

- What are Viruses?
- Any Good Viruses?
- The Bad Strains
- Pandemics and Public Safety

A virus is a biological agent that reproduces inside the cells of living hosts. When infected by a virus, a host cell is forced to produce thousands of identical copies of the virus.
Viruses

- What are Viruses?
  - A virus is a biological agent that reproduces inside the cells of living hosts. When infected by a virus, a host cell is forced to produce thousands of identical copies of the virus.
  - Unlike “living” organisms, viruses do not have a cell nucleus. They have either a DNA or RNA strand inside a protein sheath or covering.

- With only about 5,000 viruses out of millions of variants identified, viruses are one of the most plentiful life forms.

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Viruses

- Any Good Viruses?
  - Phages
  - Cowpox
  - Mammalian
  - GB-C (anti HIV)
  - Herpesviridae
  - Plant Viruses
Viruses

- The Bad Strains (airborne)
  - Smallpox
  - Ebola
  - Rhinovirus
  - Influenza
  - Chickenpox
  - Mumps
  - Measles
  - Tuberculosis
  - Diphtheria
  - Coronavirus
  - SARS
  - Hantavirus *

Viruses

- Pandemics and Public Safety

- Infection control at work and at home
Viruses

- Pandemics and Public Safety
  - Infection control at work and at home
  - Pandemics and Code Enforcement

There’s a Fungus Among Us

- What is Mold?
- Any Good Mold?
- The Bad Strains
There’s a Fungus Among Us

- What is Mold?
  - Molds are fungi that grow in the form of *multicellular* filaments, called *Hyphae*. In contrast, microscopic fungi that grow as single cells are called yeasts.
  - Some molds cause disease or food spoilage, others play an important role in biodegradation or in the production of various foods, beverages, antibiotics and enzymes.
  - Mold vs Mildew vs Mushrooms vs Moss

There’s a Fungus Among Us

- Any Good Mold?
  - *Penicillium*  
  - Blue Cheese  
  - Rennet  
  - “Botrytizing”  
  - “Decomp”  
  - Yeast

There’s a Fungus Among Us

- The Bad Strains (these produce “Mycotoxins”)
  - *Strachybotrys Chartarum*  
  - *Aspergillus*  
  - *Penicillium*  
  - *Chaetomium*  
  - *Cladosporium*
What is Bacteria?

Bacteria are "living" single-cell organisms, larger than viruses, and while not having a "cell nucleus" or organelles, they have a DNA or RNA strand inside a cytoplasm pocket.

Bacteria are found in every habitat on the planet.

Some are harmful while many serve a useful purpose.

Bacteria, unlike viruses, may respond to antibiotics.
Bacteria

- Any Good Bacteria?
  - Acidophillus
  - Yogurt
  - “Decomp”
  - Streptomyces
  - Rhizobium
  - E. Coli

- The Bad Strains
  - Streptococcus
  - E. Coli
  - Listeria
  - Salmonella
  - Clostridium
  - Tuberculosis
  - Pneumonia
  - Staphylococcus
  - Gonorrhea

II. Where Will We Face These Hazards?

- Direct Work Exposure
- Peripheral Investigations
Direct Work Exposure

- Commercial or Residential Inspections

Peripheral Investigations

- Crimes Uncovered During Inspections
- Liaison with Public Health
- Liaison with Law Enforcement

Peripheral Investigations

- Crimes Uncovered During Inspections
  - Pet hoarding
  - “Drug Dens”
  - Terrorism Bio-Labs
Peripheral Investigations

- Crimes Uncovered During Inspections
- Liaison with Public Health
  - Environmental Health Inspections
  - Epidemiology
  - Infected Persons (also in your daily duties)

Peripheral Investigations

- Crimes Uncovered During Inspections
- Liaison with Public Health
- Liaison with Law Enforcement
  - Inspections originating from their cases
  - Drug or bio labs

III. Risks and Routes

- The Points of Exposure
- Symptoms of Infection
Points of Exposure

Eyes
Injection
Inhalation
Ingestion
Absorption

Symptoms of Infection
- Flu-Like Symptoms
- Odd Rashes
- Lumps, Sores, and Swelling

IV. Personal Protection
- PPE
- Cross-Contamination
- Infection Control
PPE

- Gloves, N-95 Masks, and Goggles, etc.

Cross-Contamination

- Clean Up Before Heading to the Office or Home
  - Handwashing
  - Lint Rollers
  - Vacuum
  - Change of Clothes
  - Shoes!
Infection Control

- Good Use of PPE and Cross-Contamination Control IS Good Infection Control.
  - Protecting Co-Workers
  - Protecting the Public
  - Pandemic Best-Practices

V. Public Health, Law Enforcement, and Homeland Security

- Liaisons and Force Multipliers
- Reporting a Crime

Liaisons and Force Multipliers

- Peripheral Investigations
- Pandemics and PODs
- Force Multipliers
Reporting a Crime

- Always Begin In-House
- Local Law Enforcement
- GEMA, Georgia Homeland Security, GBI, FBI
- GISAC and Other Fusion Centers
- Homeland Security
- 1-800-US-REWARD (www.RewardsForJustice.net)

About Your Presenter

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