BIOLOGICAL HAZARDS

LCCC SAFE 225

PP 6

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OBJECTIVES
LEARN

• Identify Biological Hazards to Employees
• Identify Protections for These Hazards
BIOLOGICAL HAZARDS
ONE TYPE OF HAZARD

All Hazards are One of These Four Types

• Physical
• Chemical
• Biological
• Ergonomic
BIOHAZARDS

Organism Alive or Not or Its Products that Can Cause Disease or Other Harm to Workers
WHAT ORGANISMS CAUSE BIOLOGICAL HAZARDS

- Virus
- Bacteria or Other Microorganisms
- Plants
- Fungi
- Animals
TYPES OF COMMON HAZARDS

Common Hazards

• Bloodborne Pathogens
• Legionnaires Disease
• Lyme Disease
• Tuberculosis
• Hepatitis B
OTHER BIOLOGICAL HAZARDS

HealthCare
- Infections
Research Facilities
- Q Fever
- Typhoid Fever
Animal Care
- Bites, Scratches
- Parasites

Wood Processing
- Fungi
Childcare
- Measles
- Chickenpox (Shingles)
- Influenza
LEGIONNAIRES’ DISEASE

- First Found 1976 Legionnaire Convention
- Type of Pneumonia Caused by Bacteria
- Bacteria Found in Fresh Water
SOURCES AND TRANSMISSION

LEGIONELLA

• Contaminated Water Mainly 68°F -122°F
• Water Cooled Heat Transfer Systems
  • Cooling Towers – Most Common
  • Fluid Coolers
• Domestic Hot Water
• Cooling Tanks
MOST LIKE TO CAUSE LEGIONELLA TRANSMISSION

Inhalation of Contaminated Water

- Aerosols
- Fine Sprays
- Mists
- Droplets
SYMPTOMS

Early – Mistaken for Flu
- Headache
- Mild Fever
- Body Aches
- Fatigue
- Loss of Appetite

Later – Pneumonia
- High Fever
- Cough
- Shortness of Breath
- Chills
- Chest Pain
WORKER EXPOSURE
WORKERS WORKING NEAR

• Cooling Towers
• Evaporative Coolers
• Water Heaters
• Larger Plumbing Systems
• Pools, Hot Tubs
• Large Air Conditioning Systems

• Humidifiers
• Misting Systems
• Showers and Water Taps

Any Exposure to Water especially at Temperatures between 68°F -122°F
PREVENTION OF LEGIONELLA

• Maintenance of Circulated Water Systems
• Elimination of Standing Water
• Maintaining Water above 122°F or Below 68°F

Refer to:
Legionnaires' E-Tool
LYME DISEASE

- Black Legged (Deer Tick) Carries Bacteria Borrelia burgdorferi
- Bacteria Carried in Deer and Wild Rodents

Black Legged Tick
LYME EARLY SYMPTOMS

- Characteristic Bullseye Rash 70-80% of Patients
- Fever
- Chills
- Headache
- Fatigue
- Swollen Lymph Nodes
LYME LATER SYMPTOMS

• Severe Neck and Headaches
• Arthritis Especially in Large Joints
• Facial Palsy (Droop of Facial Muscles)
• Body Aches
• Heart Palpitations
• Dizziness Shortness of Breath
• Nerve Numbness or Pain
• Short-Term Memory Problems
LYME OCCUPATIONAL EXPOSURES

Outdoor Workers Especially in Areas With Higher Vegetation

- Forestry, Logging
- Construction
- Clearing Brush
- Park Work
LYME PREVENTION

• Avoid Higher Vegetation Especially April-September
• Permethrin 0.5% on Long Clothing
• Insect Repellents on Skin
• Examine and Remove Crawling Ticks on Skin and Clothing
• Shower Within 2 Hours
• Dry Outdoor Clothing on High Heat for 10 Minutes
TUBERCULOSIS

- Mycobacterium tuberculosis Bacteria
- Spread Through the Air – Cough, Sneeze, Breathing
TUBERCULOSIS SYMPTOMS

- Productive Cough
- Chest Pain
- Coughing Up Blood
- Fatigue
- Weight Loss
- Night Sweats
TB HAZARDOUS EXPOSURES

- Health Care
- Long Term Care Facilities
- Correctional Facilities
- Homeless Shelters
- Drug Treatment
- Long Term Disaster Facilities
TB CONTROLS

• Early Identification
• Medical Surveillance
• Case Management of Employees
• Worker Education and Training
• Isolation/Engineering Controls

OSHA Tuberculosis Page
HEPATITIS B (HBV)

- Virus that Attacks the Liver
- Can Become Lifelong Infection
- Cirrhosis (Scarring) of Liver
- Liver Failure
- Liver Cancer
- Can be Fatal
SOURCES OF EXPOSURE
BLOOD OR BODY FLUIDS

• Needle Sticks
• Injectable Drug Use
• Tattoos and Body Piercing
• Sharing Items Such as Razors or Toothbrushes
• Bites from Infected Person
SYMPTOMS OF HBV

• Fatigue
• Loss of Appetite
• Vomiting/Diarrhea
• Joint Pain
• Dark Urine/Light Colored Stools
• Jaundice
EXPOSED EMPLOYEES

• Healthcare Workers
• First Aid Staff
• Medical Laboratories
• Dental Care
• Funeral Home Workers
• Police and Fire Responders
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