

# MODULE 4

## HAZARD COMMUNICATION, OCCUPATIONAL EXPOSURE & INCIDENT RESPONSE

# HAZARD COMMUNICATION

## ***In this section, we will...***

- Explain the use of Pathogen Safety Data Sheets (PSDSs) and other sources of information regarding chemicals and infectious agents in workplace
- Identify location of hazard information on a chemical container's label

# Hazard Communication Standard Purpose

- Ensure the hazards of all chemicals produced or imported are classified, and that information concerning the classified hazards is transmitted to employers and employees
- Specific to chemical hazards



**Does not address biological hazards or infectious pathogens!**



Hazard Communication

OSHA Standards



# Hazard Communication

The standard that gave workers the right to know, now gives them the right to understand.



<https://osha.gov/dsg/hazcom/index.html>

# BIOLOGICAL HAZARD AND PATHOGEN SAFETY RESOURCES



Diseases and Conditions



Popular Health Topics

- ADHD
- Arthritis
- Asthma
- Autism Spectrum Disorder (ASD)
- Avian Influenza
- Birth Defects
- Cancer
- Chlamydia
- Chronic Fatigue Syndrome
- Diabetes
- Ebola (Ebola Virus Disease)
- Epilepsy
- Fetal Alcohol Spectrum Disorders
- Flu (Influenza)
- Genital Herpes (Herpes Simplex Virus)
- Giardiasis
- Gonorrhea
- Heart Disease
- Hepatitis

- HIV/AIDS
- Human Papillomavirus (HPV)
- Kidney Disease (Chronic Kidney Disease)
- Meningitis
- Methicillin-resistant *Staphylococcus aureus* (MRSA)
- Microcephaly
- Middle East Respiratory Syndrome (MERS)
- Overweight and Obesity
- Parasites – Scabies
- *Salmonella*
- Sexually Transmitted Diseases (STDs)
- Stroke
- Traumatic Brain Injury (TBI)
- Trichomonas Infection (Trichomoniasis)
- Tuberculosis (TB)
- Water-related Diseases
- Zika Virus

Contains pertinent information related to infectious diseases as well as other health topics

# Pathogen Safety Data Sheets (PSDS) and Risk Assessment:

- Describes the hazardous properties of a human pathogen and recommendations for work involving these agents in a laboratory setting
- Exists as an educational and informational resources for laboratory personnel in Canada working with these infectious substances
- <http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php>



Public Health  
Agency of Canada

Agence de la santé  
publique du Canada




# PSDS by Pathogen Name

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |  
Q | R | S | T | U | V | W | X | Y | Z


## D

- [Dengue virus \(1, 2, 3, 4\)](#)
- [Diphtheroids](#)

## E

- [Eastern \(Western\) equine encephalitis virus](#)
-  [Ebola virus](#)

## I

-  [Influenza A virus](#) (subtypes H5, H7, H9)
- [Influenza Virus Type A](#) (excluding 1918 influenza A (H1N1) strain and subtypes H5, H7 and H9)
- [Influenza Virus \(B and C\)](#)

# Hazard Information Labeling



## Hazard Communication Standard Labels

OSHA has updated the requirements for labeling of hazardous chemicals under its Hazard Communication Standard (HCS). All labels are required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. A sample revised HCS label, identifying the required label elements, is shown on the right. Supplemental information can also be provided on the label as needed.

For more information:



[www.osha.gov](http://www.osha.gov) (800) 321-OSHA (6742)

**SAMPLE LABEL**

CODE \_\_\_\_\_ } **Product Identifier**  
 Product Name \_\_\_\_\_ }  
 \_\_\_\_\_ }  
 \_\_\_\_\_ }

Company Name \_\_\_\_\_ } **Supplier Identification**  
 Street Address \_\_\_\_\_ }  
 City \_\_\_\_\_ State \_\_\_\_\_ }  
 Postal Code \_\_\_\_\_ Country \_\_\_\_\_ }  
 Emergency Phone Number \_\_\_\_\_ }

**Hazard Pictograms**

**Signal Word**  
**Danger**

Keep container tightly closed. Store in a cool, well-ventilated place that is locked.  
 Keep away from heat/sparks/open flame. No smoking.  
 Only use non-sparking tools.  
 Use explosion-proof electrical equipment.  
 Take precautionary measures against static discharge.  
 Ground and bond container and receiving equipment.  
 Do not breathe vapors.  
 Wear protective gloves.  
 Do not eat, drink or smoke when using this product.  
 Wash hands thoroughly after handling.  
 Dispose of in accordance with local, regional, national, international regulations as specified.

**Precautionary Statements**

**Highly flammable liquid and vapor.** } **Hazard Statements**  
**May cause liver and kidney damage.** }

**Supplemental Information**

**Directions for Use**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Fill weight: \_\_\_\_\_ Lot Number: \_\_\_\_\_  
 Gross weight: \_\_\_\_\_ Fill Date: \_\_\_\_\_  
 Expiration Date: \_\_\_\_\_

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# OCCUPATIONAL HEALTH & MEDICAL SURVEILLANCE

## ***In this section, we will...***

- Describe response procedure after suspected exposure to an infectious disease/pathogen
- Demonstrate understanding of response protocols if exposure is suspected
- Describe occupational health plan including:
  - Post exposure procedures
  - Medical surveillance
  - Immunizations
  - Respiratory medical clearance

# Training & Drills

- Must be hands on and frequent
- Should not be primarily computer based or lecture
- Must include an opportunity to drill the actual process of donning and doffing PPE and respirators
  - Must include a trained observer and decontamination



# Hand Washing & Self-Care

## Very Important!

- Personal hygiene
- Hand washing
- Sneeze into your elbow
- Vaccinations such as influenza and HBV
- Adequate rest, healthy eating, and exercise



# Decontamination

Detailed procedures for decontamination include:

- Using dilute bleach solution
- Alcohol based hand cleaner, and/or EPA approved hospital grade disinfectants



*\* The University of Nebraska Biocontainment Unit procedures include bleach wiping clogs at the end of the doffing process.*

# Basic Risk Categories: Ebola Exposure as an Example

- CDC and OSHA have not developed specific risk categories for safety & health purposes.
- Many workplace guidelines include two risk categories:
  - High risk: blood and body fluid exposure exists
  - Low risk: workers are in close proximity to suspect or known cases without blood or body fluids (low grade fever)



# Risk Categories from Interagency Board for First Responders

(Patient's) Ebola Exposure Level	Definition
Known or Suspected Exposure	Known disease, known contact with Ebola patient or travel within 21 days to an area with current Ebola cases.
Possible Exposure	Environmental or interpersonal exposure in an area with suspect or recent cases except as outlined in top box.
No Known Exposure	No known exposure to Ebola Virus Disease patients or travel to areas with known outbreak of the disease.
Symptoms Presented	Definition
Asymptomatic	No symptoms relevant to an infectious disease.
Fever	Measured temperature $\geq 100.4$ F
Body Fluids	Patient has fever with vomiting, diarrhea, blood in vomitus and/or feces, is incontinent of urine or stool, or is sweating, salivating, or otherwise producing blood and body fluids to which emergency responders could be exposed.

**Source:** Recommendations on Selection and Use of Personal Protective Equipment for First Responders against Ebola Exposure Hazards, Interagency Board for Equipment Standardization and Interoperability, 10/24/14

# EMERGENCIES AND INCIDENT RESPONSE

## *In this section, we will...*

- Recognize significance of alarms
- Recall emergency response plan
- Describe emergency disinfection and exposure prevention procedures
- Describe procedures for responding to spills or potential exposures
- Describe emergency evacuation routes and assembly areas

# Exposure Management

- An Employer must make available vaccines & appropriate prophylactic medications.
  - Post-exposure evaluation & follow-up care
  - No cost to the employee and at a reasonable time
  - Licensed physician or healthcare professional
  - Follow recommendations of the US Public Health Service
  - All lab tests are conducted by an accredited lab at no cost to employee

# Other Issues in Exposure Management

- Fatigue:
  - Should limit time spent in hazardous activities.
  - Work/ rest cycle is key.
- Stress:
  - Should be aware of the signs and symptoms and provide support and relief to effected workers.
- Employers should have compensation policies in place for workers who are put on leave for self-monitoring after an exposure.

# USDOT - Regulations on Transport of Ebola Contaminated Waste

- The treatment of Ebola patients creates a large quantity of contaminated medical waste.
  - A single EVD patient can generate 1000 pounds of waste
  - 3 to 4 bags per day (mainly PPE) and 10 quarts of liquid waste per day
- Materials contaminated with Ebola are Category A infectious substances; Hazardous Materials Regulations §173.196

# CDC Guidelines for packaging, shipping and transporting lab samples

- 29 CFR 1910.1030, specimens should be placed in a durable, leak-proof secondary container for transport within a facility.
- To reduce the risk of breakage or leaks, do not use any pneumatic tube system for transporting suspected Ebola virus disease specimens.
- [Visit the CDC's website](http://www.cdc.gov/vhf/ebola/healthcare-us/laboratories/specimens.html) for more details.

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# EXPOSURE RISK ASSESSMENT/ SAFETY RISK ASSESSMENT



## *In this section, we will...*

- Discuss Exposure Risk and Hazard Assessments
  - Explain the importance of conducting risk assessments in identifying potentially infectious material, chemical, and safety hazards
  - Important questions that may be used to for hazard assessment

# Occupational Exposure Assessment

An occupational exposure assessment is used to determine the nature of the hazard, the specific groups of workers who are impacted, and the routes of exposure. Once these determinations are made, a hazard control strategy can be developed.

## *Considerations*

- Will job tasks include potential exposure to blood and body fluids?
- What is the proximity of workers to the contagious individual or contaminated waste?
- Will workers be potentially exposed through contact, inhalation, ingestion, or injection?
- Will job tasks, work environment, fatigue, and related factors increase risk of exposure?

# Respiratory Hazard Assessment

- Employers shall identify and evaluate respiratory hazards in the workplace.
  - There is no method for measuring the concentration of Ebola virus in workplace air.
  - There is no permissible exposure limit for Ebola virus.
  - The determination for using a APR or PAPR is based on experience in the field in prior Ebola and other filovirus outbreaks.