



# Bloodborne Pathogen Training 2019



# Training Objectives

By the end of this training you will be able to:

1. Explain what a bloodborne pathogen is
2. Explain prevention methods
3. List the steps you would take if an exposure happened

# WAC

- Under Washington Administrative Code 296-823-12005 the Health District must provide bloodborne pathogen training:
  - At no cost
  - Upon hire
  - Annually after initial training
  - To those employees and volunteers who may be exposed to bloodborne pathogens



# Introduction to Bloodborne Pathogens

# What are Bloodborne Pathogens?

- Bloodborne pathogens (BBPs) are pathogenic microorganisms that are present in human blood and can cause diseases in humans.
- Of primary concern are Human Immunodeficiency Virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV).

# BBP Transmission

- BBPs can be transmitted through contact with infected blood or other potential infectious materials (OPIM) such as:
  - Semen or vaginal secretions
  - Cerebrospinal, synovial, pleural, or amniotic fluid
  - Saliva (in dental procedures, when blood is present)
  - **All body fluids** of an undetermined nature, or where blood is present

# What is a BBP exposure?

- An exposure occurs when the pathogen is introduced directly into the body through a break in the skin, by a needle stick, or through a cut with a contaminated object.

Needle sticks are the most common means of exposure to a bloodborne pathogens.

# Other types of BBP exposures

- BBP exposures can also occur with contact to mucous membranes (eyes, nose, mouth) or non-intact skin.

If blood is splashed on **intact** skin, the pathogen will **not** be spread.



# What does not spread BBP?

- Touching
- Hugging
- Kissing
- Arthropods (mosquitoes, ticks)
- Airborne routes
- Sharing eating/drinking/cooking utensils



# These tasks pose the highest risk for exposure to a BBP

Venipuncture  
(drawing blood  
from a vein)

Capillary blood  
draw

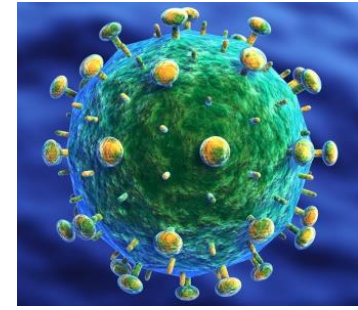
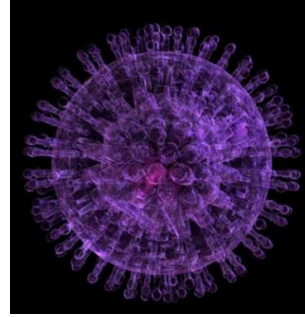
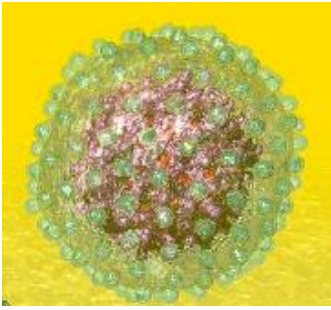
Oral examination  
(if blood is  
present)

Specimen  
collection

Collection of  
evidence at a  
dump site

Skin examinations  
when the  
patient's skin is  
not intact

Providing CPR or  
First Aid



# Bloodborne Diseases

# Hepatitis B (HBV)

- Hepatitis means “inflammation of the liver”
- Primarily transmitted through “blood-to-blood” contact
- May lead to serious liver conditions such as cirrhosis or liver cancer
- Virus can survive in the environment for 1 week or longer

# Overview of HBV

- Incubation period (time from exposure to onset of symptoms) is 2 weeks – 6 months
- Average incubation is 60-90 days
- Symptoms;
  - Fatigue
  - Loss of appetite
  - Abdominal pain
  - Nausea
  - Rash
  - Jaundice
  - Dark colored urine

# Phases of HBV

- **Acute phase** – time when a person becomes infected and for a few weeks to several months later
- **Chronic phase** – while some individuals recover after the acute phase, others remain infected for the rest of their lives. 2-6% of adults who contract hepatitis B become chronic carriers.

- Blood from persons with HBV infection contains the highest amounts of virus of all body fluids and is the most likely vehicle of transmission in the healthcare setting.

**There is a 30% risk of infection after a single positive needle stick**

# Occupational risk for HBV

- HBV is highly infectious, can be transmitted in the absence of visible blood, may remain infectious on environmental surfaces for at least 7 days.
  - Other transmission routes include: needle sticks, mucosal, and through non-intact skin.



- The Bloodborne Pathogens Standard issued in 1991 by OSHA mandates that Hep B vaccination be made available at the employer's expense to employees who have reasonable anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potential infectious materials.

# HBV Vaccine

- Given in a series of 3 injections over a 6 month period
  - After the series is complete a blood test will be done to confirm that antibodies have formed to protect you from the virus

# HBV Vaccine

- If antibodies are positive, you are considered a “responder” and have protection from the virus
- If antibodies are negative, you are considered a “nonresponder” and a 2<sup>nd</sup> series will be given
- If no response to 2<sup>nd</sup> series, you are a “nonresponder” and you will not receive any more doses

# Hepatitis C Virus (HCV)

- Primarily spread by exposure to infected blood
- Incubation period ranges from 2 weeks to 6 months, most commonly 6-9 weeks
- Symptoms:
  - Anorexia, vague abdominal discomfort, nausea and vomiting

# HCV in the U.S.

- In the U.S., an estimated 2.7 – 3.9 million people have Hep C and don't know it.
- $\frac{3}{4}$  of those with Hep C were born between 1945 – 1965
- Many people with HCV infections do not recall or report having any specific risk factors.

# HCV testing recommendations

- The CDC recommends one-time HCV testing for persons born from 1945 – 65.
  - This population has a disproportionately high prevalence of HCV infection and related diseases.

# Occupational risk to HCV

- Risk of exposure in wet and dried blood.
  - Can live in dried blood for up to 6 weeks in temperatures of 39 to 72 degrees F.
- Bleach (1:10 dilution) is the most effective antiseptic. It was shown to eliminate HCV within 1 minute of exposure.

From: the Journal of Infectious Diseases. November 23, 2013

# Human Immunodeficiency Virus (HIV)

- Human Immunodeficiency Virus (HIV) is the virus that causes Acquired Immune Deficiency Syndrome (AIDS)
- Virus attacks the body's immune system, destroying the body's ability to fight infections
- Routes of exposure may include sexual contact, IV drug use, mother-to-child transmission during pregnancy, breastfeeding, and blood-to-blood contact



# HIV exposures

- As of 2010, 57 documented transmissions and 143 possible transmissions had been reported in the United States.
- No confirmed cases of occupational HIV transmission to health care workers have been reported since 1999.
- Health care workers who are exposed to HIV-infected blood via percutaneous routes at work have a 0.3% risk of becoming infected.
  - In other words, 3 of every 1,000 such injuries, if untreated, will result in infection.

# Occupations risk for HIV

- Extremely fragile in the environment
- Probably only infective for minutes outside body fluids.
  - “When it dries it dies”



# Preventing BBP Exposure

# Universal / Standard Precautions

- A system which assumes that every direct contact with blood and other potentially infectious materials **is infectious**  
and
- Requires every employee exposed to these materials to be protected as though such materials were HBV, HCV, and/or HIV infected.

# Engineering Controls

- Defined as:
  - Technology and devices used to isolate and remove hazards from the worker
  - Used to eliminate or minimize worker exposure to blood or OPIM
- Examples
  - Needle guards/retractable syringes
  - Splash guards/goggles
  - Mechanical pipetting
  - Puncture-resistant sharps containers

# Sharps containers

- Puncture resistant and closable – no pop bottles allowed!
- Labeled as “Biohazard” or color-coded red
- Leak Proof
- Available wherever blood is drawn or injections given
- Kept upright
- Replaced when full
- Lid closed and locked when filled

# Sharps handling

- Never recap or try to remove needle from disposable syringe
- Place all sharps in puncture resistant containers



# Work practice controls

- Defined as alterations in the way a task is performed to reduce the possibility of exposure to blood or other potentially infectious material
  - Gloves
  - Hand Washing
  - Using Personal Protective Equipment
  - Handling sharps according to manufacturer directions
  - Limiting personal activities in work areas



# Glove use



- Gloves will be provided by SHD
- Gloves will be worn by employees when performing tasks where exposure to blood or other potentially infectious materials may occur – not required for vaccine administration
- After use, gloves shall be removed, disposed of, and hands washed as soon as possible

# Hand washing

- Hands must be washed before and after all client contact
- When hand washing facilities are not available, hands may be cleansed with a hand sanitizer and washed with soap and water as soon as possible
- SHD shall provide hand sanitizer to staff

Washing your hands is **the single most** important means of preventing the spread of infection

# Personal Protective Equipment (PPE)

- Defined as specialized clothing or equipment used by employees to protect themselves from direct exposure to blood or other potential infectious materials.



# Types of PPE

Gloves

Lab coats

Face masks

Eye  
protection

CPR pocket  
masks

Disposable  
coveralls

Stick & pick

# Personal activities

- Eating, drinking, applying cosmetics, lip balm, or contact lenses is prohibited in work areas where there is a potential for exposure to infectious materials



# Cleaning up BBP spills

# How to clean up a spill

- Wear gloves
- Use Isolyzer, especially when broken glass is involved
- Use a dustpan and broom to complete clean-up

# Optional cleaning method

- Wear gloves
- Wipe up as much of the fluid as possible with paper towels. Put the towels in a plastic bag, seal, label properly, and dispose of in a biohazard waste container.
- Flood the area with a commercial disinfectant
- Clean the area thoroughly
- Remove and dispose of gloves in biohazard waste container
- Wash hands



# Housekeeping practices

- SHD will assure that the worksite is maintained in a clean and sanitary condition
- All equipment and environmental or working surfaces shall be cleaned and decontaminated after contact with blood or OPIM
- Clean exam rooms and lab counter surfaces, exam tables, and baby scales daily with an EPA-approved germicide.
- Venipuncture surfaces are cleaned after each use with a EPA-approved germicide

# Exposure to a BBP

# Steps to take if you have an exposure to a BBP

- If you experienced a needlestick or sharps injury or were exposed to blood or other body fluid, **immediately follow these steps:**
  - Wash needlesticks and cuts with soap and water
  - Flush splashes to the nose, mouth, or skin with water
  - Irrigate eyes with clean water, saline, or sterile irrigants
  - Report the incident to your supervisor
  - Immediately seek medical treatment

# WAC 246-100-205

## **Special diseases—HIV—Testing and counseling following occupational exposure.**

A person who has experienced a substantial exposure to another person's bodily fluids in a manner that presents a possible risk of transmission of HIV, and who is exposed while engaged in a category of employment determined to be at risk of substantial exposure to HIV, may ask a state or local health officer to order pretest counseling, HIV testing, and post-test counseling of the person who was the source of the bodily fluids in accordance with RCW [70.24.340](#).

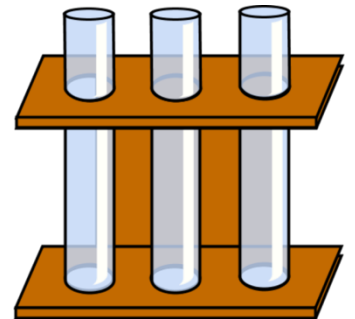
- (1) Substantial exposure that presents a possible risk of transmission shall be limited to:
  - (a) A physical assault upon the exposed person involving blood or semen;
  - (b) Intentional, unauthorized, nonconsensual use of needles or sharp implements to inject or mutilate the exposed person; or
  - (c) An accidental parenteral or mucous membrane or nonintact skin exposure to blood, semen, or vaginal fluids.
  
- (2) The alleged exposure must have occurred on the job while the individual was employed or acting as an authorized volunteer in one of the following employment categories that are at risk of substantial exposure to HIV:
  - (a) Law enforcement officer;
  - (b) Firefighter;
  - (c) Health care provider;
  - (d) Staff of health care facilities;

# Post-exposure evaluation

- Once information about the exposure is collected and documented, the exposed employee will be referred to a medical consultant for evaluation and disposition
- Initial evaluation and any indicated prophylaxis should ideally occur within 2 hours of exposure to minimize the chance of BBP transmission
- Testing of the source's blood and the employee's blood will be done by the medical consultant

# Testing

- If the source does not consent to testing and the employee wishes to request a Health Officer order for HIV testing due to starting HIV prophylaxis after a substantial exposure, the request will be made through the Health Officer or designee immediately



# RCW 70.24.340(4)

- A law enforcement officer, firefighter, health care provider, health care facility staff person, department of corrections' staff person, jail staff person, or other categories of employment determined by the board in rule to be at risk of substantial exposure to HIV, who has experienced a substantial exposure to another person's bodily fluids in the course of his or her employment, may request a state or local public health officer to order pretest counseling, HIV testing, and posttest counseling for the person whose bodily fluids he or she has been exposed to. **A person eligible to request a state or local health official to order HIV testing under this chapter and board rule may also request a state or local health officer to order testing for other blood-borne pathogens.**

# Supervisor responsibilities

- The exposed volunteer's supervisor or a supervisor on site where the exposure occurred is the primary SHD staff person responsible for assuring that the following actions occur and are documented



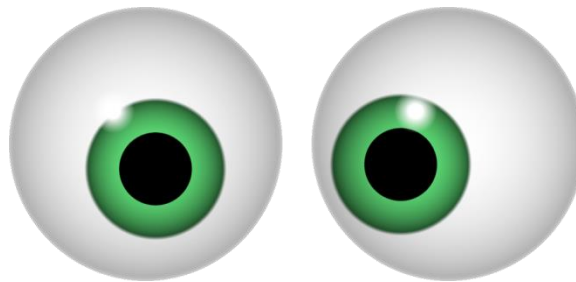
# Maintenance of medical records

- Forms and records for volunteer exposure incidents shall be part of the confidential volunteer records.
- All volunteer records are to be kept confidential and may not be disclosed without the volunteer's written consent, except as otherwise required by law
- SHD shall maintain the exposure records for 30 years following the volunteer leaving the MRC.

# Looking for more information about BBP?

- The Centers for Disease Control and Prevention can provide you with wide variety of information on Bloodborne Pathogens

<http://www.cdc.gov/niosh/topics/bbp/>



# BBP Quiz

- Please take a few moments and complete the quiz.
- Send completed quiz to Therese Quinn by email ([MRC@IslandCountyWA.gov](mailto:MRC@IslandCountyWA.gov)), or regular mail (PO Box 5000, Coupeville, WA 98239).