

# Employee Health Infection Control

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## Topics

- Tuberculosis
- Bloodborne Pathogens-Hep B & C/HIV
- Occupational Exposures
- Exposure Control Plan
- Hand Hygiene
- When to Stay at Home

# Tuberculosis Overview

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Lewis and Thurston County are considered low risk communities, therefore we do not do annual skin tests.

We do skin test upon exposure.

At Providence St. Peter and Centralia Hospital we use the PAPR system instead of the N95 Respirator mask.

# Bloodborne Pathogens Training



# Types of Bloodborne Pathogens we will focus on:

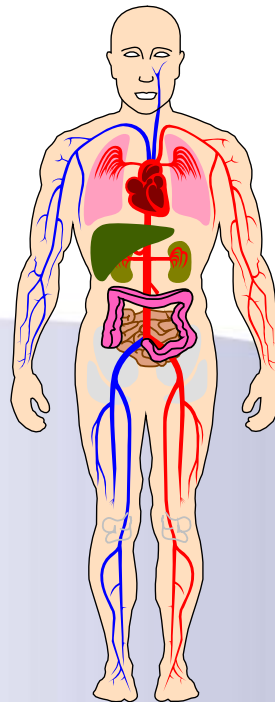
- **Hepatitis B Virus (HBV)** ➤ **Hepatitis B**
- **Hepatitis C Virus (HCV)** ➤ **Hepatitis C**
- **Human Immunodeficiency Virus (HIV)** ➤ **AIDS**

*Note: A person can have co-infections - two or more infections in the body at the same time. For example: a person having HIV/HCV co-infection has both HIV and HCV.)*

“Bloodborne Pathogens are microorganisms that are present in blood or other potentially infectious materials (OPIM) and can cause disease.

“Blood’ includes human blood, human blood components, products made from human blood, and also medications derived from blood (e.g., immune globulins, albumin, etc.).”

Present in  
or  
Blood



Other  
Potentially  
Infectious  
Materials

# **Bloodborne Pathogens (BBPs)**

## **Can be found in the following OPIMS**

- **Semen**
- **Vaginal secretions**
- **Body fluids (such as cerebrospinal, synovial, and amniotic fluid)**
- **Any body substances visibly contaminated with blood**
- **Tissues such as biopsy samples and organs**
- **Saliva in dental procedures**

# Transmission of BBPs



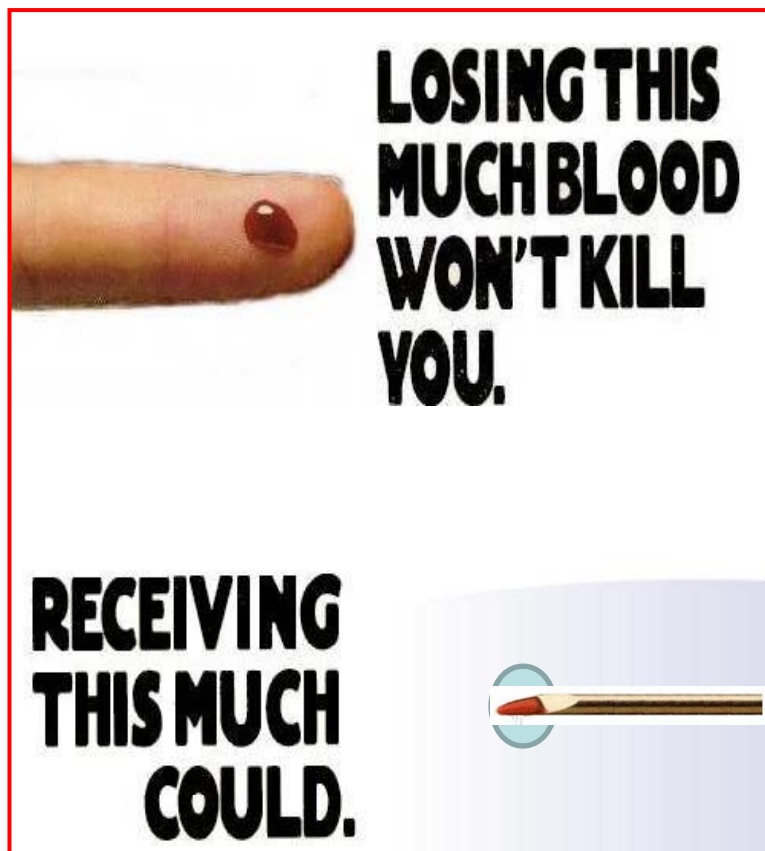
Bloodborne Pathogens can enter your body through:

- a needle stick or sharps injury
- a break in the skin (cuts, rash, dermatitis)
- contact with mucous membranes
- sexual contact
- other modes depending on the organism



# Transmission of BBPs

Risk of infection depends on several factors at the time of exposure:

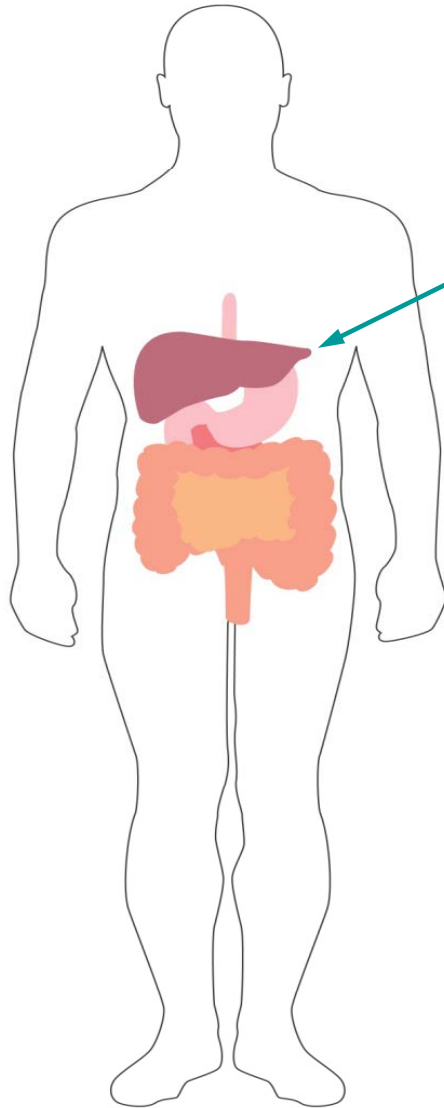


- which pathogen
- route of exposure: splash vs. needle stick
- the amount of infected blood / OPIM in the exposure
- the amount of virus in the blood / OPIM
- whether or not there was post-exposure treatment

*Courtesy of Owen Mumford, Inc.*



# Viral Hepatitis - General Overview



## The liver:

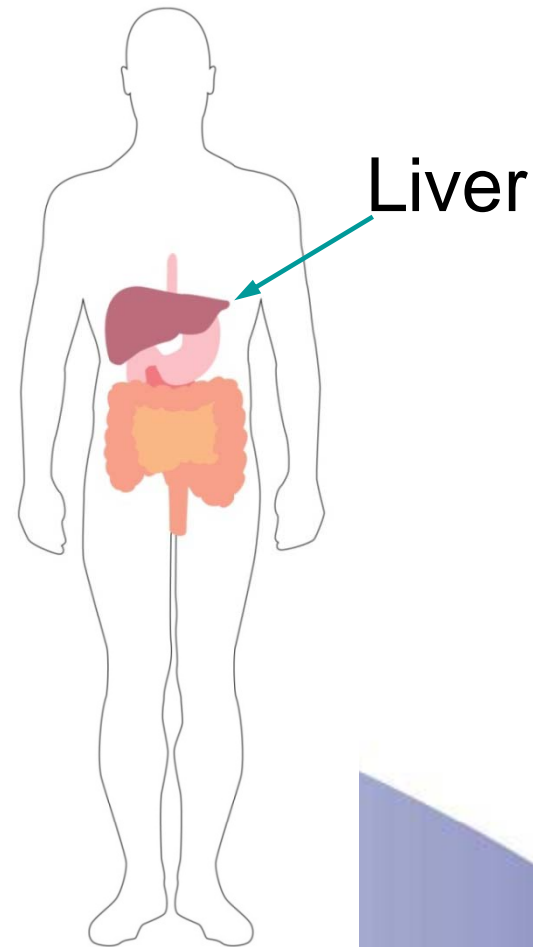
- Largest gland in the body
- Weighs about 3 lbs
- Removal of waste products
- Vitamin & Mineral storage
- Drug breakdown & removal
- Synthesis of plasma proteins & clotting factors

*Courtesy of Schering Corporation*

## Viral Hepatitis –

“Viral hepatitis infections can be acute (short-term) or some can become chronic (long-term) and last the rest of one’s lifetime.

- The word *hepatitis* means inflammation of the liver
- Hepatitis is also the name of a family of viral infections that affect the liver in the following ways
  - inflammation, enlargement, and tenderness
  - acute and chronic infections
  - possible liver damage ranging from mild to fatal



# Viral Hepatitis

## Symptoms

- Flu-like symptoms
- Fatigue
- Abdominal pain
- Loss of appetite
- Nausea / Vomiting
- Joint pain
- Jaundice
- Dark urine



Normal eyes



Jaundiced eyes

# HBV-Hepatitis B

## Clinical Features

- *Incubation period from time of exposure to onset of symptoms = 6 weeks – 6 months  
average is around 90 days*
- *Acute Illness (jaundice) = ~90%*
- *Chronic Infection (carrier) = ~10%*
- *Immunity possible after acute infection*

# HBV - Hepatitis B

## HBV Transmission

- Unprotected sex with multiple partners
- Sharing needles during injecting drug use
- From infected mother to child during birth
- Sharps/needle sticks

# HCV - Hepatitis C

## General Facts

- The most common chronic bloodborne infection in the U.S.
- 3.2 million Americans infected
- ~17,000 new infections per year
- Leading cause of liver transplantation
- 40-49 year olds have highest prevalence of chronic Hep C
- 12,000 deaths from chronic disease/year
- No broadly effective treatment
- No vaccine available



Healthy human liver



Hepatitis C liver

# HCV-Hepatitis C

## Clinical Features

- *Incubation period = 2 weeks – 7 months; if symptoms do occur, they do so an average of 6-7 weeks after exposure*
- *Acute Illness (jaundice) = ~ 20%*
- *No signs or symptoms = ~75%*
- *Chronic Infection (carrier) = 75-85%*
- *No protection from future infection*

# HCV-Hepatitis C in Washington State

- *66% of the people infected in our state do not know it*
- *8X as many cases of HCV as cases of HIV/AIDS*
- *~80% of people who have ever injected street drugs or shared drug “equipment” are infected*



# HCV - Hepatitis C

## HCV Transmission



- Injecting drug use
- Hemodialysis (long-term)
- Blood transfusion and/or organ transplant before 1992
- From infected mother to child during birth
- Occupational exposure to blood - mostly needle sticks
- Not efficiently transmitted sexually
- Household exposures - rare

In Washington State 66% of the people infected do not know it

There are 8 times as many cases of HCV as cases of HIV/AIDS

# Health Care Workers and BBPs

## Occupational Transmission



Risk of infection following  
needle stick / cut from a  
positive source:

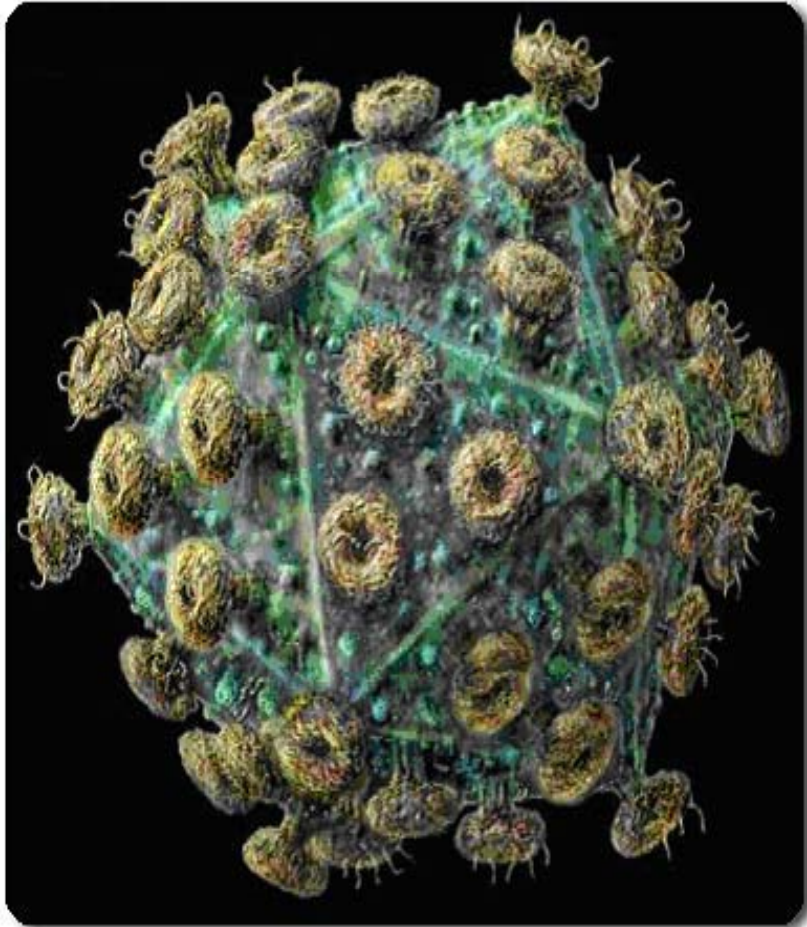
- ◆ **HBV: 6%-30%**
- ◆ **HCV: 1.8% (average)**
- ◆ **HIV: 0.3%**

# HIV / AIDS

**HIV** stands for **H**uman **I**mmunodeficiency **V**irus

**AIDS** stands for **A**cquired **I**mmuno**D**eficiency **S**yndrome

# AIDS is defined by a specific set of clinical conditions caused by HIV



- HIV attacks the immune system damaging the body's ability to fight disease
- Fragile – few hours in dry environment
- Everyone who has AIDS has HIV, but not everyone who has HIV has AIDS
- Medical treatment can delay the onset of AIDS

# Human Immunodeficiency Virus (HIV)

## HIV Transmission

- Sexual contact
- Sharing needles and/or syringes
- From HIV-infected women to their babies during pregnancy or delivery
- Breast-feeding
- Needle sticks



# CONDITIONS FOR HIV TRANSMISSION

- HIV is not spread by casual contact, it must be *acquired*
- Three conditions must be met in order for HIV to be transmitted
  1. HIV source
  2. Sufficient dose of the virus
  3. Access to the bloodstream of another person

# HUMAN IMMUNODEFICIENCY VIRUS (HIV)

## HIV Infection → AIDS

- Many have no symptoms or mild flu-like symptoms
- Most infected with HIV eventually develop AIDS
- Incubation period  $\approx$ 10-12 yrs from HIV progression to AIDS without treatment
- Opportunistic infections & AIDS-related diseases - TB, Kaposi's sarcoma, many others
- Treatments are limited / No cure



# How prevalent is HIV/AIDS in the US?

- The CDC estimates that about 1 million people in the U.S. are infected with HIV
  - ~25% of these people are undiagnosed and unaware that they are infected
- In 2007 there were 42,655 new cases of HIV/AIDS infections diagnosed in the U.S.
  - 74% of those were males



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# How prevalent is HIV/AIDS in WA state compared to the rest of the US?

- First case of AIDS in WA state reported in 1982
- As of December 31, 2008:
  - there were a total of 10,121 persons living with HIV disease in WA state
  - 57% of these people with HIV disease have AIDS
- 85% of all HIV cases diagnosed 2003-08 were male
- There are an average of 560 new cases of HIV disease each year in WA state
- Most people with HIV disease diagnosed 2003-08 were between the ages of 30-39 (40-49 was a close second).

# HIV Testing

## \*Anonymous Testing

- Client doesn't give their name

## \*Confidential Testing

- Client gives their real name and information is kept in medical records
- Results are confidential

## \*Informed Consent

- With rare exceptions, HIV testing can only be done with the person's consent



# REPORTING REQUIREMENTS FOR HIV/AIDS

- AIDS and HIV are reportable conditions in Washington State
- HIV+ results obtained through anonymous testing are not reported until this person seeks medical care for conditions related to HIV/AIDS.
- Federal Law requires that states take action to notify all spouses/ ex-spouses of HIV-infected persons going back 10 years
  - WA state law requires public health officials to assist with notification of partners / spouse of their possible exposure to HIV.

# DISABILITY AND DISCRIMINATION

HIV / AIDS are considered disabilities under :

- the Washington State Law Against Discrimination
- the Federal Americans with Disability Act of 1990
- the Rehabilitation Act of 1973.

# Difficult Realities

- In 2007, the largest number of new HIV/AIDS diagnoses was for persons aged 40-44.
  - Many have families
  - 35-40% will progress from HIV → AIDS within 12 months
- Infections & malignancies that accompany AIDS as well as certain medications can disfigure the body
- Men who have sex with men and injected drug users may already be subject to social discrimination and may encounter even more social discrimination

# PERSONAL IMPACT OF HIV/AIDS

## **Loss of :**

income / savings  
health insurance  
emotional support  
housing

## **Facing :**

premature death  
infections / malignancies  
disfigurement  
social discrimination

***Guilt***

***Grief***

***Helplessness***

***Rage***

***“Numb”***

# FAMILIES & CARE PROVIDERS

❖ Often feelings of family members and caregivers will mirror those of the patient



- sadness
- anger
- vulnerability
- helplessness
- isolation



# **STAGES OF GRIEF & PSYCHOLOGICAL SUFFERING**

## **❖ Chronic Grief:**

**Before the grieving process for one death is complete, more people have died.**

- **people who work with and care for people with AIDS**
- **people living with HIV/AIDS**



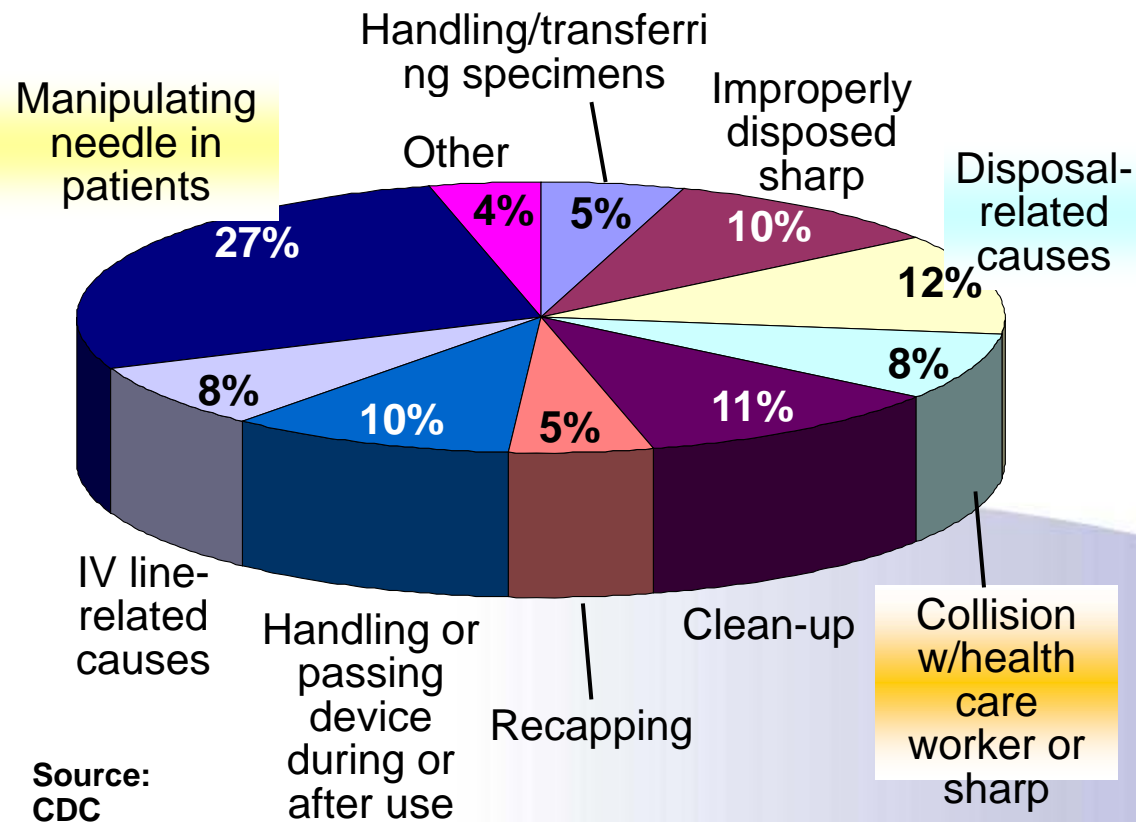
# SPECIAL POPULATIONS

- ◆ HIV infection affects people from all ethnic groups, genders, ages, and income levels, but some groups have been significantly affected by the AIDS epidemic.
  - Men who have sex with men
  - IV drug users
  - People with hemophilia
  - Women
  - People of color



# Health Care Workers and BBPs

## Occupational Transmission



#1 is needle sticks

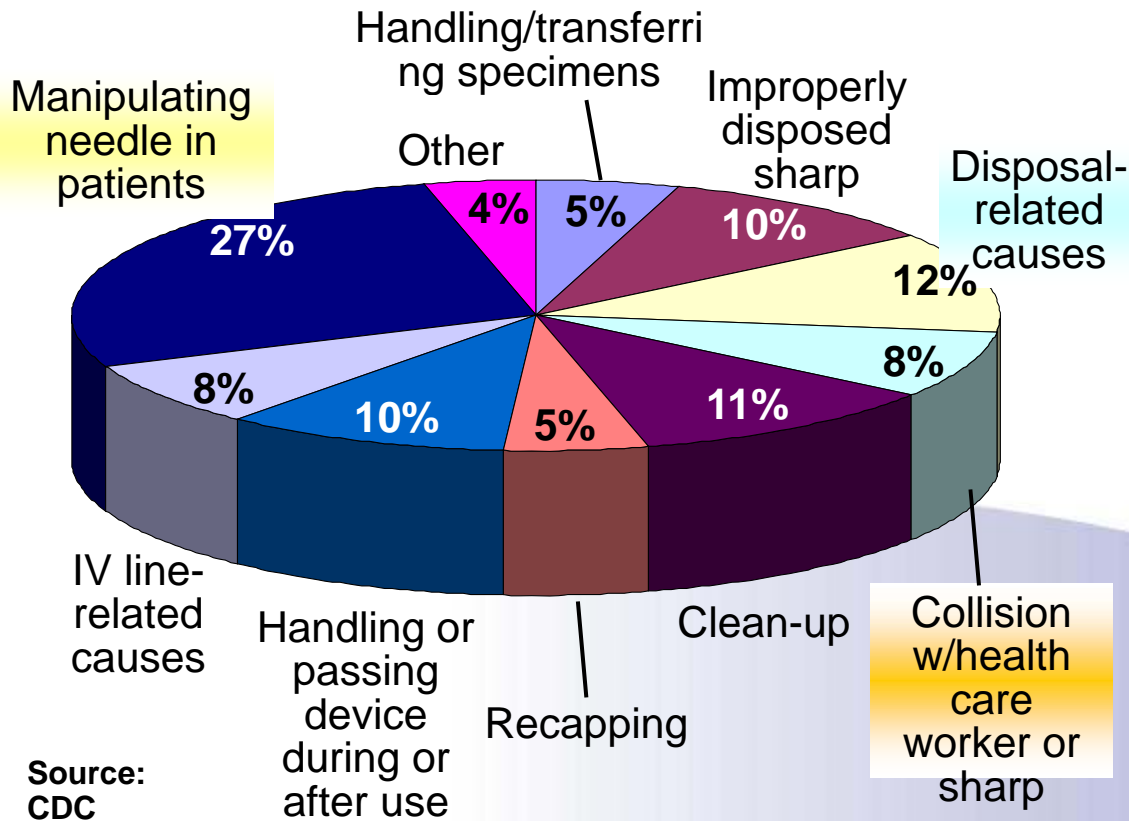
#2 is cuts from other contaminated sharps (scalpels, broken glass, etc.)

#3 is contact of mucous membranes or broken skin with contaminated blood

Source:  
CDC  
[1999]

# Health Care Workers and BBPs

## Occupational Transmission



#1 is needle sticks

#2 is cuts from other contaminated sharps (scalpels, broken glass, etc.)

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# Exposure Control Plan

To minimize your risk of exposure to bloodborne pathogens



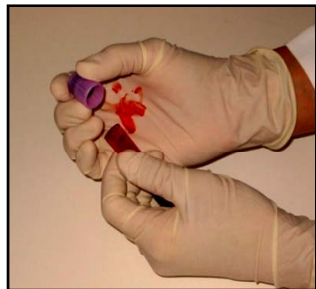
- Identify employees who are most at risk
- Education
- Hepatitis B Vaccine
- Post exposure evaluation & follow-up
- Review equipment and practices
- Record keeping

*Located at: Employee Health*

# Exposure Controls

## Reducing your risk

- Standard Precautions
- Safer Medical Devices
- Personal protective equipment
- **Everything** properly labeled
- Hazardous material disposal
- Practice safe work habits



# Exposure Controls

## STANDARD PRECAUTIONS

Treat all **blood** and **OPIIM** as if known to be infectious with a bloodborne disease.



# Exposure Controls

## Equipment and Safer Medical Devices Sharps disposal containers

- 20% of HIV infections due to needle sticks involved disposal of the needle
- PSPH has implemented new sharps containers





# Exposure Controls

## Safer Medical Devices and Practices

- Sharps with engineered sharps injury protections (SESIP)
- Needleless systems
- Plastic IV capillary tubes
- Don't bend, recap, or remove needles or other sharps
- Place contaminated, reusable sharps immediately in appropriate containers

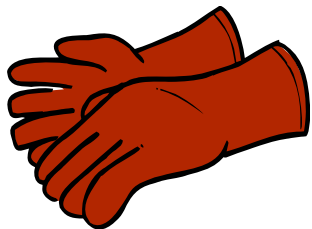


# Exposure Controls

## Personal Protective Equipment (PPE)

You must wear all required PPE. PSPH provides you with PPE at no cost:

- Gloves
  - Lab coats
  - Shoe covers
  - Gowns
  - Face shields or
  - Masks with eye protection
  - PAPR
- DO NOT wear yellow isolation gowns as warm-up jackets*



# Exposure Controls

## Safe Work Practices

Clean-up spills, biohazard waste, and broken glassware/sharps



- ✓ Clean the area with Hospital Approved disinfectant. (We use a quaternary cleaner in most areas)
- ✓ Saturate the spill area with disinfectant. Follow directions on bottles for contact time
- ✓ Know where to find plans & policies related to hazardous waste materials in Docushare.



# ST. PETER HOSPITAL

PH&S Intranet Service Areas Featured Sites Core Values

Search:  Go [Advanced Search](#) [Search Tips](#)



- PSPH Home**
- SWSA Home
- Practitioner Contact Info and Practitioner Privileges
- PSPH Physician Website
- Providence Centralia Hospital
- Providence Physician Network
- SoundHomeCare and Hospice
- PSPH Site Index
- Operational Excellence
- ProvConnect**
- Login
- Support
- Prov Reports
- Reports**
- BBFE Report
- Employee Injury Report
- Unusual Occurrence Report
- Calendars**
- Computer Education

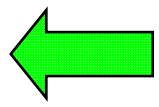
1 2 3 4 5

**Know the Code!**  
New emergency codes are coming to PSPH.

[view story >](#)

- Department Sites +
- Commonly Used Links +
- Log In Links +

- [Daily News](#)
- [Five Minute Manager](#)
- [Docushare](#)
- [The Joint Commission](#)
- [Commitment to Excellence](#)
- [System Staff Directory](#)
- [Monthly Dashboards](#)



# Exposure Controls

## Laundry

- **Wear PPE per Standard Precautions when handling dirty laundry**
- **All laundry is processed as if it is highly contaminated**



# ***And Remember...***

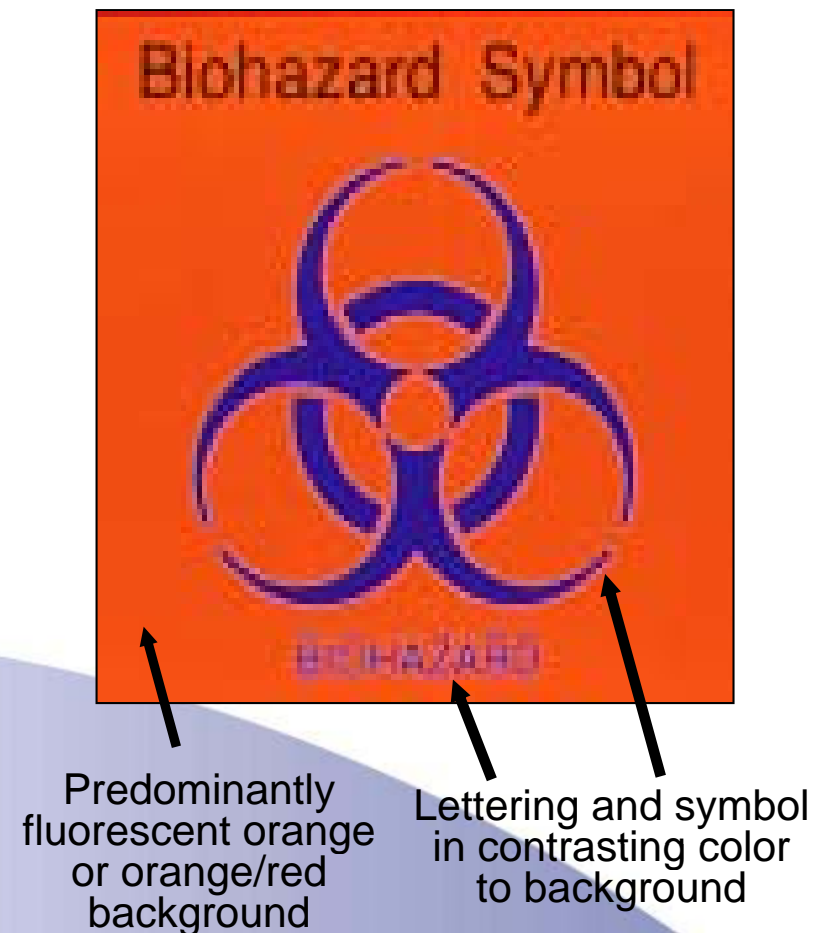
**Please! Don't  
overflow those  
laundry  
bags!**



# Exposure Controls

## Communication of Hazards

- Labels attached securely to any containers or items containing blood/OPIIM
- Red bags/containers may substitute for labels
- Signs posted at entrance to specified work areas



# Exposure Controls

## What goes into the Regulated Waste Containers

- Items contaminated with liquid/semi-liquid blood or OPIM
- Items caked with dried blood or OPIM that are capable of releasing these materials
- Pathological and microbiological wastes containing blood or OPIM





# Management of Occupational Exposure

If you have an exposure incident to blood or OPIM, immediately do the following:



- ✓ Thoroughly clean the affected area with soap and water
- ✓ Flush with water splashes to the nose and mouth  
Irrigate eyes with clean water or sterile saline
- ✓ Report exposure to your supervisor and Employee Health and fill out an Incident Report Form

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# Management of Occupational Exposure

- Report the exposure to Employee Health immediately and they will walk you through the protocol
  - Employee Health Services = 3-4341
    - » 0730-1630 Monday - Friday
  - Injury Report Line = 3-5000
    - » for after hours and weekends

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# Management of Occupational Exposure

## PSPH Responsibility

- Provide immediate post-exposure evaluation and follow-up to exposed employee:
  - At no cost
  - Confidential
  - Testing for HBV, HCV, HIV
  - Preventive treatment when indicated
  
- Test blood of source person if HBV/HCV/HIV status unknown (if possible)



# Exposure Controls

## Hand Hygiene and Glove Use

❖ If you wear gloves, do you still need to perform hand hygiene?

**YES!**

❖ Do you perform hand hygiene before you put the gloves on or after you remove the gloves?

**BOTH!**



# Hand Hygiene

## Scenarios

The nurse uses Purell after taking Mr. Smith's blood pressure.

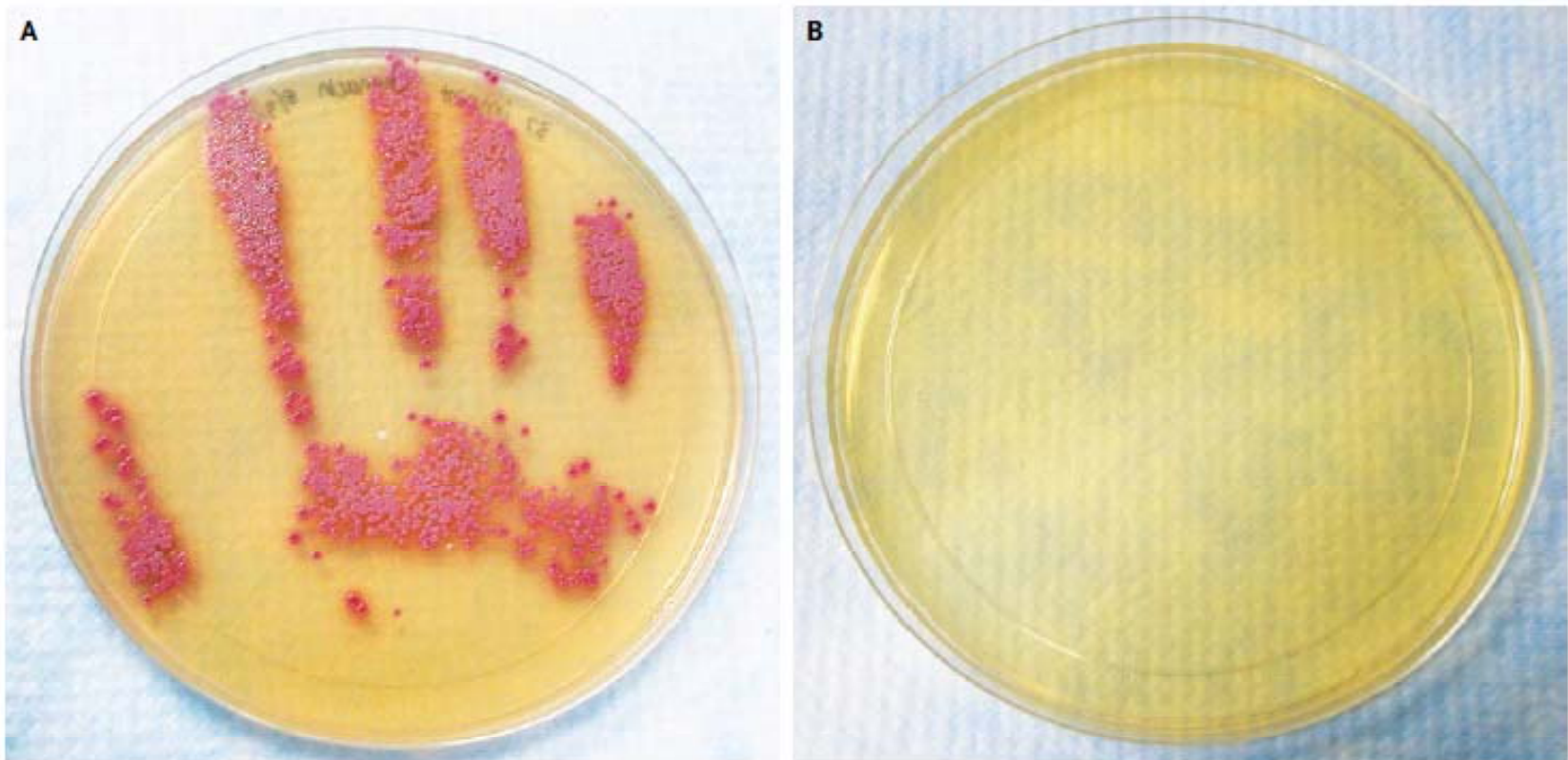
As she leaves the room she answers a call from the lab on her portable phone.

Does she need to do hand hygiene again before she takes Mrs. Jones' blood pressure?

**YES!**



## One more slide promoting hand hygiene

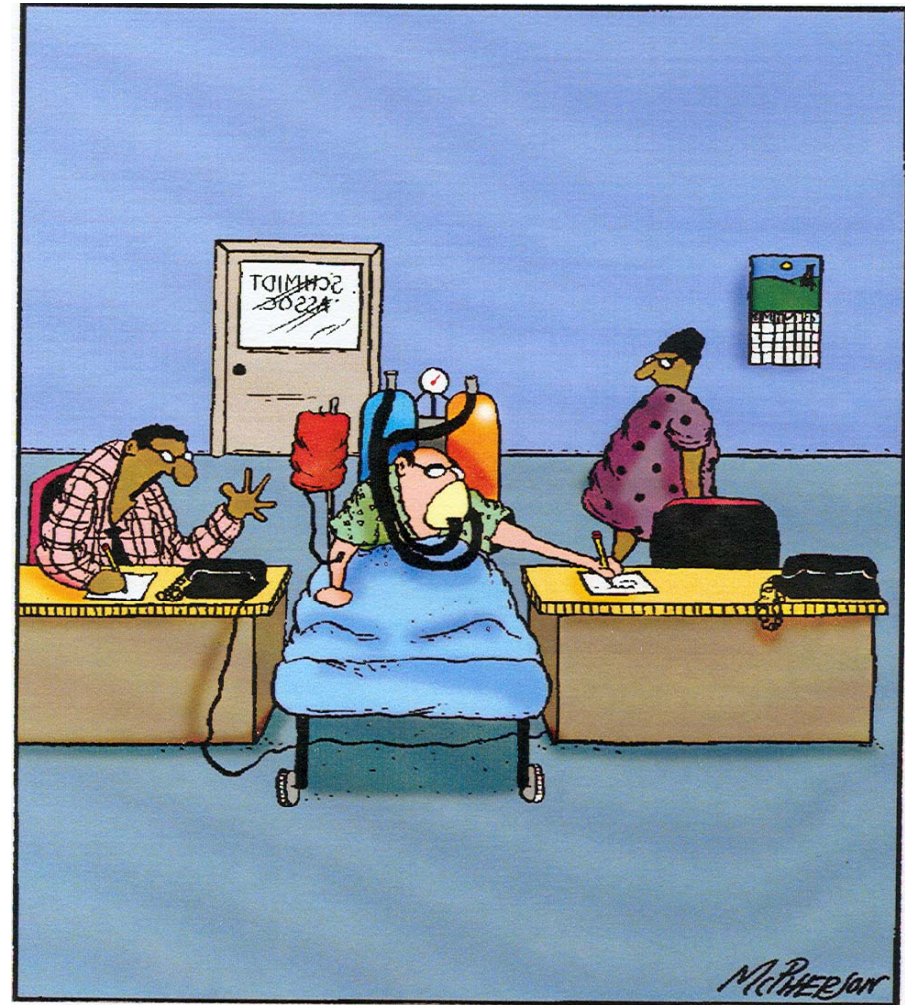


The picture on the left shows the imprint of a healthcare worker's hand after performing an abdominal exam on the patient. The red colonies are MRSA. This patient was found to be *colonized* (a carrier) of MRSA.



# Stay home when you are sick

- Fever >100
- Diarrhea / Vomiting
- Cough (if > than 3 weeks, see Employee Health)
- Keep vaccinations current:
  - Annual influenza vaccination
  - Chickenpox
  - Hepatitis B
  - Tetanus
- Do you think you might have what many of your coworkers have?



“For cryin’ out loud! Would you just take a sick day for once in your life!”

## Infection Control: Isolation Signs



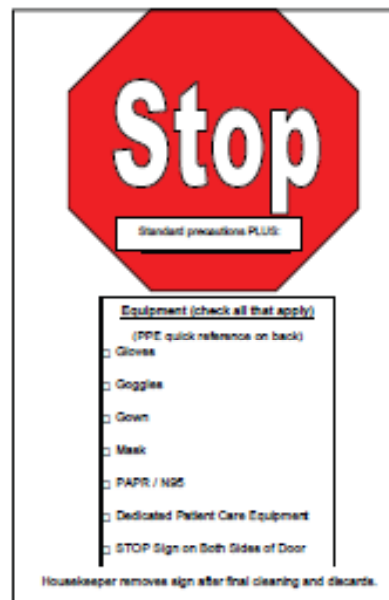
*Use yellow for patients with VRE*



*Use green for patients with MRSA*



*Use orange for patients with C. difficile*



*Use this sign for all other patients requiring isolation (other than VRE, MRSA or C. diff)*

Patient Management <u>Infection Control: ext. 37178</u>	CONTACT PRECAUTIONS					DROPLET PRECAUTIONS			AIRBORNE PRECAUTIONS			
	MRSA	VRE or ESBL	Clostridium difficile	Lice/Scabies	RSV	INFLUENZA	Bacterial meningitis (until 24 hr after starting abx)	Pertussis	Tuberculosis	Primary Chicken pox - Or Disseminate Herpes Zoster	Measles	SARS
<b>Isolation Precautions</b>												
Standard Precautions	X	X	X	X	X	X	X	X	X	X	X	X
Contact Precautions	X	X	X	X	X							
Airborne Precautions (negative pressure room and PAPR or N 95 masks for all individuals entering the room)									X	X	X	X
Droplet Precautions (surgical mask)						X	X	X				
<b>Required PPE</b>												
Gloves	X	X	X	X	X							
Gown	X	X	X	X	X							
Mask					X	X	X	X				
Eye protection (goggles)					X							X
N95 / PAPR									X			X
Immunity (had disease or vaccination)										X	X	
<b>Patient Placement</b>												
Private Room or separate care area	X	X	X	X	X	X	X	X				
Negative Pressure Room (turn alarm on)									X	X	X	X
Door closed at all times									X	X	X	X
<b>Hand Hygiene</b>												
Alcohol based hand rub	X	X		X	X	X	X	X	X	X	X	X
Antimicrobial Soap	X	X	X	X	X	X	X	X	X	X	X	X
Regular soap and water			X			X	X	X	X	X	X	
<b>Patient Transport</b>												
Limit movement to essential medical purposes only (supervised)	X	X	X	X	X	X	X	X	X	X	X	X
Place mask on patient to minimize dispersal of droplets when outside the room						X	X	X	X	X	X	X
<b>Cleaning, Disinfection of Equipment</b>												
Daily disinfection of high touched surfaces with hospital approv. disinfectant and routine terminal upon discharge	X	X		X	X	X	X	X	X	X	X	X
Terminal clean with bleach/water sol. 1:9 (10% sol.)			X									
Dedicated equipment (disinfect prior to leaving room)	X	X	X		X							
Linen management as with all other patients	X	X	X	X	X	X	X	X	X	X	X	X
<b>Visitors</b>												
Instructed on Hand hygiene	X	X	X	X	X	X	X	X	X	X	X	No
Gloves if patient contact	X	X	X	X	X							visitors
Mask (surgical) within 3 ft of pt.						X	X	X				No
Mask or N 95 (for airborne)									X			
Immunity (had disease or vaccination)										X	X	visitors
Gown for patient contact	X	X	X		X							
Discourage children from visiting	X	X	X	X	X	X	X	X	X	X		

Yellow = VRE

Green = MRSA

Orange = C.diff.