OSHA
Bloodborne Pathogen
and
Tuberculosis Training

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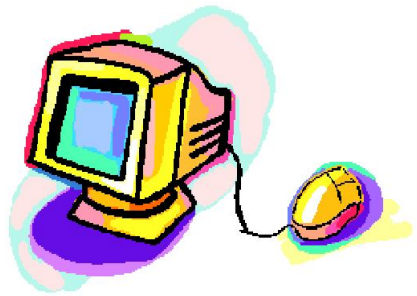
Who is OSHA?

- Occupational Safety and Health Admin.
- Requires employers to provide a safe working environment
- Developed “Occupational Exposure to Bloodborne pathogen” standard

Standard Requirements

- Limit occupational exposure to human blood and other potentially infectious materials in the work place
- Provide employee with knowledge of job associated risks
- Provide protective devices/measures that can prevent most exposures
- Annual training – available online
- Written Exposure Control Plan



Exposure Control Plan

- Defines who is at risk
- Outlines procedures to prevent or minimize employee exposure
- Outlines procedures to follow in event of exposure
- Available online (www.ecu.edu)

What are bloodborne pathogens?

- Infectious materials in the blood which can cause disease in humans

- Exposure can result in serious illness or death

Who's at risk?

- Anyone who handles blood, blood components or body fluids

- Touches potentially contaminated equipment or surfaces

Job duties involving possible exposure

- Surgery
- Patient exams
- Phlebotomy and injections
- Cleaning and sterilizing instruments
- Emergency first aid

- Handling infectious waste
- Cleaning blood spills
- Handling soiled linen
- Cell, tissue, or organ culture

How are bloodborne diseases transmitted?

- Contaminated sharps injuries (needle sticks, broken glass, scalpel blades)

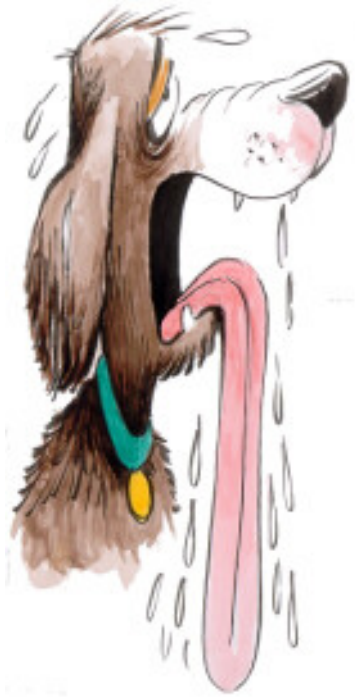
- Mucous membrane splash (eye, mouth, nose)
- Contact on non intact skin, e.g., cuts, rash, blisters, hangnails

Infectious body fluids

- Blood or serum
- Semen
- Vaginal secretions
- Amniotic, pericardial, pleural, synovial and cerebrospinal fluids

Not infectious for bloodborne pathogens

- Feces
- Urine
- Tears
- Saliva



- Vomitus
- Sputum
- Sweat

** unless visible blood

Bloodborne Pathogens of Concern

- Hepatitis B
- Hepatitis C
- HIV/AIDS
- Syphilis

Other Bloodborne Pathogens

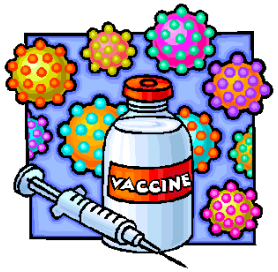
- Malaria
- Babesiosis
- Brucellosis
- Laptospirosis
- Arboviral infections
- Relapsing fever
- Creutzfeldt-Jakob disease
- Viral hemorrhagic fever

Hepatitis B

- Infection of the liver
- Can lead to cirrhosis, liver cancer and death
- 20% risk of infection with a contaminated sharp
- Virus can survive in dried blood up to7days

Symptoms of Hepatitis B

- Fatigue
- Loss of appetite, nausea
- Jaundice (yellowing of skin and eyes)
- Fever
- Abdominal pain, joint pain
- 30% have no symptoms
- preventable



Hepatitis B Vaccine

- Recommended for all high risk groups
- Free- provided by employee health
- Safe
- 3 shots- initial , 1mo., 6mo.
- Life long immunity
- Decline- must sign OSHA waiver

Hepatitis C

- Most common chronic blood borne infection in US
- Causes liver damage, cirrhosis and liver cancer
- Leading reason for liver transplants
- 2% risk of infection by contaminated sharp

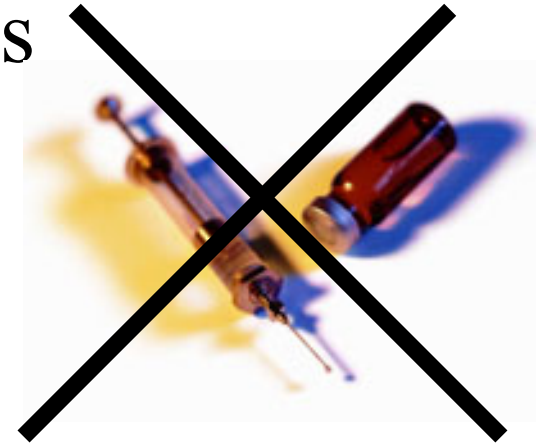
Symptoms of Hepatitis C

- Same as Hepatitis B
- May occur within 2 weeks to many years
- 85% don’t know they are infected

Hepatitis C Vaccine

- **There is NO vaccine and NO cure for Hepatitis C!**

- There are 50,000 needlesticks annually related to HCV infected patients



Major Risk Factors for Hepatitis B and C

- Sexual activity with multiple partners
- IV drug use
- Hep B- neonatal transmission
- Hep C- blood transfusion prior to 1990

- small risk- tattooing, body piercing, shared nasal cocaine


HIV/AIDS

- Attacks the body's immune system
- Unable to fight off other infections
- No vaccine and no cure
- 6,000 new infections every day




Symptoms of HIV

- Mild flu-like symptoms initially (fever, swollen glands)

- May be free of symptoms for months to many years

- Eventually leads to AIDS and death

HIV Transmission

- High risk sexual activity and IV drug abuse account for 80%

- Neonatal

- Accidental occupational exposure

Chances of Infection

- If you are exposed to HIV infected blood/body fluids by:

A dirty needle/sharp	3 in 1000 (0.3%)
Mucous membrane splash	1 in 1000 (0.1%)
Non intact skin	1 in 1000 (0.1%)

Prompt antiviral treatment after exposure can reduce risk of infection by 60 – 80%

Syphilis

- Venereal disease
- Transmitted via lesion contact or blood
- Treatable with antibiotics

Should we be concerned?

- NC rank by state:

5th for cases of syphilis

10th for new cases of HIV/AIDS

(Pitt Co. #2 in state)

5th for cases of gonorrhea

10th for cases of chlamydia

How can I protect myself?

- Standard Precautions- All blood and body fluids are treated as if infectious for blood borne pathogens
- Personal protective equipment
- Work practices
- Engineering controls

Personal Protective Equipment (PPE)

- Provides a barrier between you and infectious material

- Should be available in appropriate size and type needed, at no cost to employee

- Latex free if allergic

Latex Allergy?

- Ask for latex free PPE
- Mild sensitivity can progress to life-threatening allergic reaction with continued exposure

Hospital supplies that may contain latex

- Adhesive tape
- Catheters
- Disposable syringes
- Elastic bandages
- Electrode pads
- Protective sheets
- Stethoscope tubing
- Stoppers on vials
- Wound drains

Household Products that may contain latex

- Baby pacifiers
- Wheelchair tires
- Tennis balls
- Condoms/Diaphragms
- Disposable diapers
- Balloons
- Dental Dams

Latex Allergy Determination at ECU

- Basic Health History at new Employee Orientation
- Annual Update of Health Care Workers

PPE Selection Based on Anticipated Exposure

- Gloves- any time contact with blood or other body fluids may occur
- Masks and eye protection- if there is any chance of splashing into the mouth nose or eyes
- Gowns/lab coats, shoe covers- risk of splattering or spilling on clothes or skin

Engineering Controls

- Devices that reduce employee risk by isolating or removing the hazard

  Examples:

  Sharps containers

  Safety medical devices

  Biosafety cabinets

  Negative pressure rooms

Work Practice Controls

- Depends on you!
- Examples- proper handwashing,

getting Hep B vaccine

proper handling of sharps

proper disposal of infectious waste

wearing appropriate PPE

Work Practice Controls

- Handwashing- Single most important means of preventing the spread of infection

* Waterless handcleaner- unless visibly soiled or if no soap and water available

Breaking the chain of Infection

Your health is in your hands!

When to wash hands

- Before and after touching every patient
- After removing gloves
- After handling potentially infectious material
- After using the bathroom
- Before eating, smoking, applying cosmetics, handling contact lens


One in three people
do not wash
their hands
after using
the restroom.

Centers for Disease Control Sharps Injury Statistics

- 385,000 needlesticks/year involving HCW's
- 36 contract HIV
- 2000 become infected with Hep C
- 400 contract Hep B
- 20 contract additional types of infectious diseases

Handling Sharps

- Needles should not be bent, recapped, removed, or broken
- Use tongs, or dust pan and broom to pick up contaminated broken glass (not hands!)
- Discard all needles and sharps
- in closable, leak proof, puncture
- resistant sharps containers

WARNING:

DO NOT OVERFILL OR FORCE SHARPS INTO CONTAINER!!

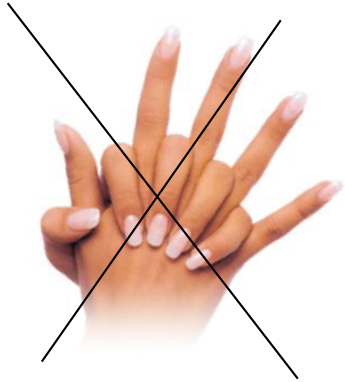
Needlestick Safety and Prevention Act

- Mandates adoption of safety devices

ex.-self sheathing needles, scalpels, blood drawing devices, and needleless IV systems
Replace glass with plastic

- No mouth pipetting
- Do not reuse blood tube holders

Personal Hygiene



- No eating, drinking, smoking, applying cosmetics, or handling contact lens in areas where blood and body fluids are handled
- Do not keep food and drinks in refrigerators/freezers where infectious material may be stored
- Artificial nails/tips are not allowed for direct patient care givers

Biohazardous Waste

- Discard contaminated sharps in approved sharps containers
- Discard all other infectious material in red biohazard trash bags
- Picked up by biohazard waste technicians
- Incinerated


BIOHAZARD

International Biohazardous Waste Symbol

Housekeeping/Decontamination

- Disinfect equipment and surfaces with approved disinfectant (Dispatch, 10% bleach solution, Saniwipes) when….
  - Surfaces become contaminated
  - At the end of the work shift
  - After any spill of blood or other potentially infectious material (OPIM)


UTION CAUTION CAUTION CAUTION CAUTION CAU

Blood or OPIM Spill Procedure

- Prevent accidental exposure to others
- Wear appropriate PPE
- Absorb spill (paper towels or biohazard spill kit)
- Spray Dispatch or bleach solution, set for 10 min. or air dry
- Dispose of all cleaning materials and PPE in biohazard trash bag

What if I am exposed?

- Wash with soap and water
- Splash to mucous membranes- rinse or flush with water for 15 min.
- Have source patient remain available

Who needs to know?

Contact:

ECU Office of Prospective Health

744-2070

After 5pm, on weekends or holidays, call the Blood Exposure Hotline

847-8500

Post Exposure Follow Up

- Review medical histories
  – risk factors, vaccinations
- Baseline blood tests- CBC, CMP, HIV, HEP B & C, syphilis
- HIV results in less than 2 hrs
- Confidentiality is maintained

HIV/AIDS Exposure

- Baseline labs, 6 weeks, 3 mo.s, and 6 mo.s
- Referral to Infectious Disease Specialist
- Evaluation for post exposure prophylaxis (PEP)
- PEP reduces risk of infection 60-80%

Tuberculosis
Airborne Pathogen

Old Enemy

New Battle

Transmission

- Caused by a tiny germ called mycobacterium tuberculosis
- Spread when some one with active TB disease coughs, talks, laughs, sneezes, or spits TB bacteria into the air
- Uninfected person breathes in TB bacteria

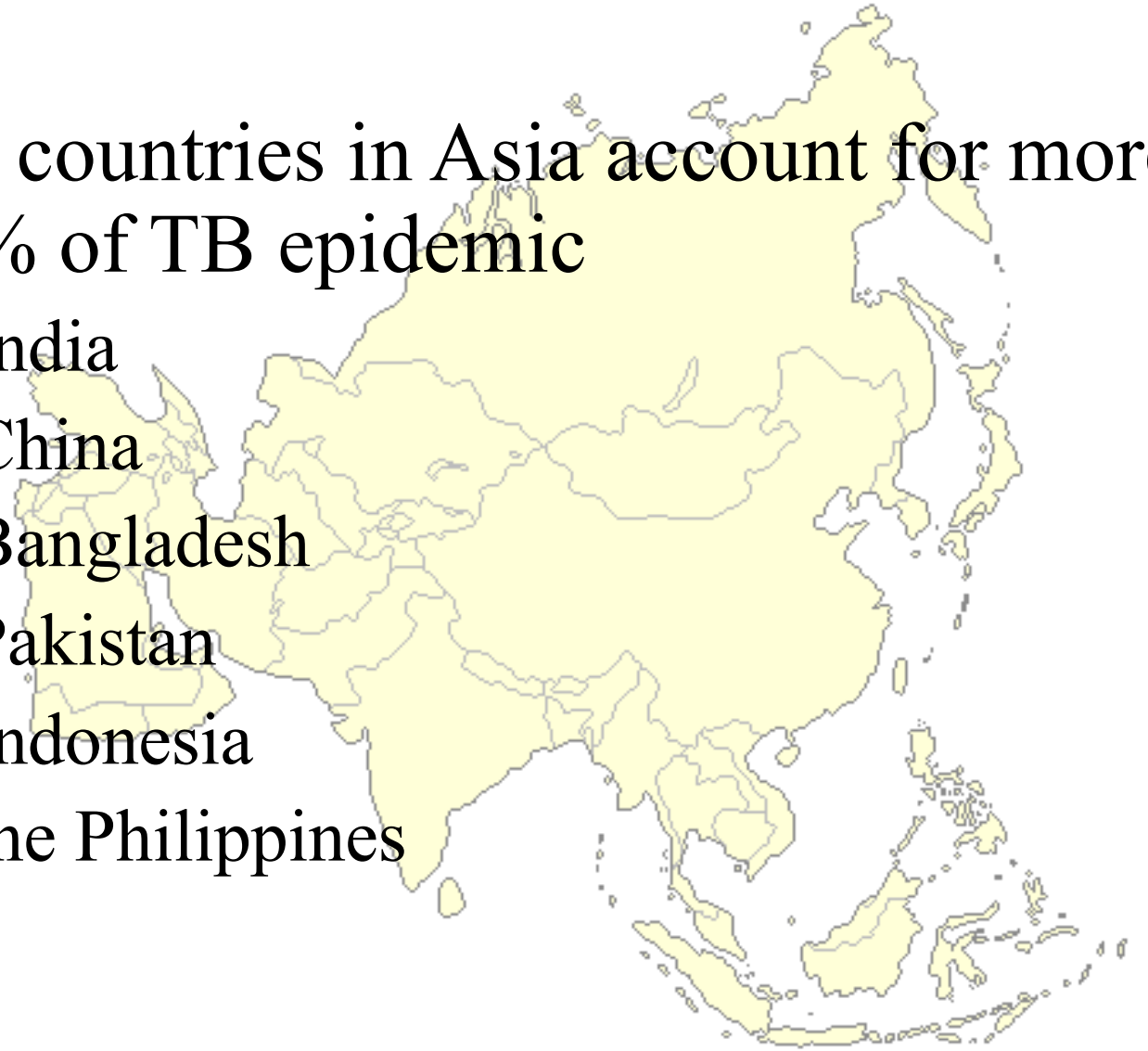
Signs & Symptoms

- Cough > 2weeks
- Fever
- Weight loss
- Night sweats
- Bloody sputum

High Risk for TB

- Immunocompromised (HIV/AIDS)
- People living in close conditions (prisons, nursing homes)
- Homeless
- Foreigners
- Economically/medically disadvantaged

MTB in the World



- Six countries in Asia account for more than 50% of TB epidemic
  - India
  - China
  - Bangladesh
  - Pakistan
  - Indonesia
  - the Philippines

MTB in North Carolina

- North Carolina's number of MTB cases rank 8th in the US for 2003.
- Foreign born persons account for 53% of TB cases in US.
- Hispanics account for 17% of TB cases in NC

LATENT TB INFECTION	ACTIVE TB DISEASE
Exposed to active TB disease	Infection has progressed to active disease
Positive TB skin test	Positive TB skin test
No symptoms	Will have symptoms
Negative chest xray	Positive chest xray
WILL NOT INFECT OTHERS	CAN INFECT OTHERS

How do you test for TB?

- A test called a TB skin test or PPD. The test will show if you have any TB bacteria in your body.
- All employees or students that are potentially exposed to TB need to receive a skin test annually.

What if I have Latent TB Infection?

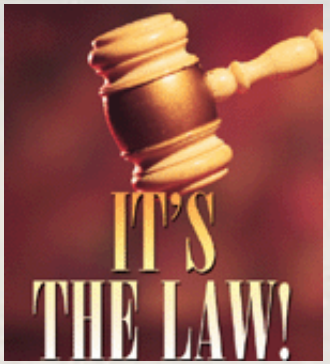
- 90% of healthy people with TB infection will never develop TB disease.
- Should be evaluated for prophylaxis medications by the health department or a private physician.
- Prophylaxis meds reduce lifetime risk of developing active TB disease by 95%
- Be aware of signs and symptoms of active TB disease

Multi-drug resistant TB strains (MDR TB)

- Patients don’t complete treatment, don’t kill all TB germs in body
- TB germs mutate, can survive standard TB treatment
- Difficult to diagnose, control, and cure
- MDR-TB becoming more prevalent

Prevent MDR TB

- Must take antibiotics as directed for active TB disease
- It's the Law!
- Direct observed therapy



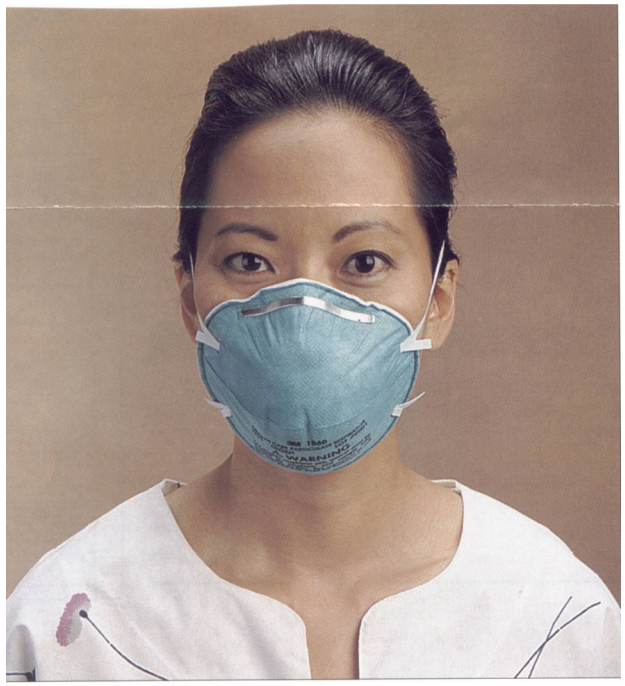
How do Healthcare Workers avoid exposure to TB?

- Notice if patients have symptoms of TB. Offer tissues and masks.
- TB patients are kept in “negative pressure” rooms to isolate them.
- Patient should wear mask outside room and during transport
- All employees who work with potential TB patients must be fit tested for an approved respirator to wear when working with infectious individuals.

N-95 Respirator

- Remember your size

- Fit testing required annually for those who perform high risk procedures on TB pts.
- All others with direct pt. contact will be fit tested every 5 years.
- Annual employee health update



N-95 Respirator

Notify Prospective Health
of facial changes:

large amount of weight gain or loss

facial trauma and/or surgery

growth or shaving of beard

If unable to wear mask, you will
be instructed in the use of a PAPRA.

Power Air-Purifying Particulate Respirators (PAPRA)

What do I do if I'm exposed to TB?

- You are notified by Infection Control of patients seen in your area that have been diagnosed with TB
- After notification, call Employee Health to schedule a PPD skin test.
- A PPD is done at the time of exposure and 3 months after the exposure

TB Exposure Continued

- If develop a positive PPD after exposure
- Assess for active TB (chest xray, symptoms)
- If chest xray is negative
  -Latent TB infection
- Referral to private physician or local health dept. for preventive antibiotics

What if I am diagnosed with TB disease?

You will receive antibiotics which will eventually kill the TB bacteria in your body

Can not work until no longer infectious (usually 2-3 weeks after starting antibiotics)

Office of Prospective Health

THE BRODY SCHOOL OF MEDICINE AT EAST CAROLINA UNIVERSITY

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