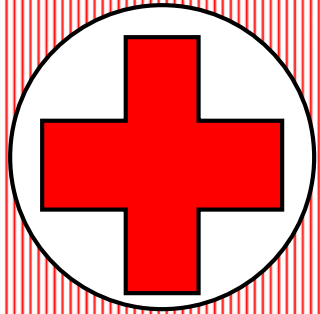


Louisiana

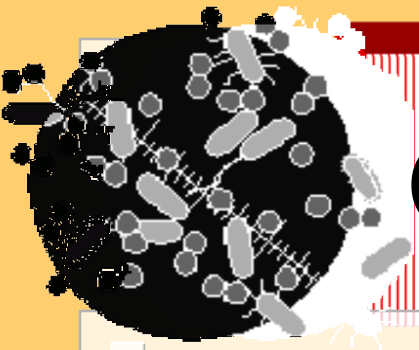
Division of Administration

Office of Risk Management



**BLOOD-BORNE
PATHOGENS**





GOAL

- Minimize/prevent claims involving exposure to blood-borne pathogens

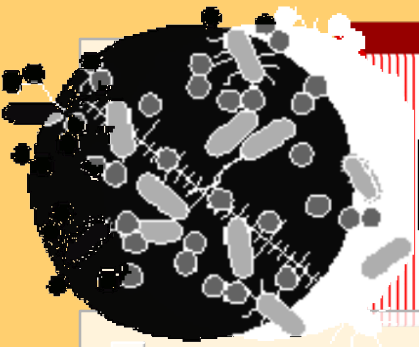


BACKGROUND INFORMATION



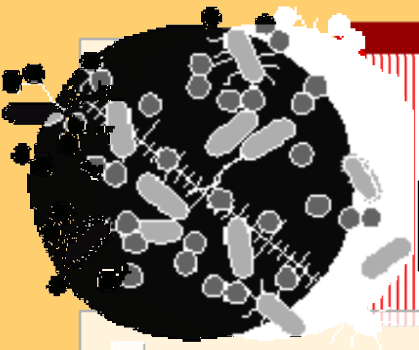
BLOOD-BORNE PATHOGENS...

- Microorganisms that are carried in blood and can cause disease
- Examples:
 - **Malaria**
 - **Syphilis**
 - **Human Immuno-deficiency Virus (HIV)**
 - **Several hepatitis types**



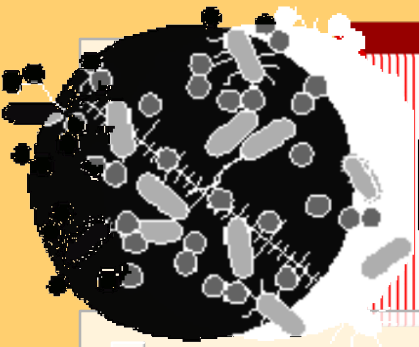
FOUND IN ...

- Blood
- Semen
- Vaginal fluid
- Urine
- Breast milk
- Tears
- Saliva
- Mucous
- Cerebral spinal fluid
- Any other bodily fluid containing blood



BBP INFECTS

- All ages
- Every socio-economic class
- Every country world-wide

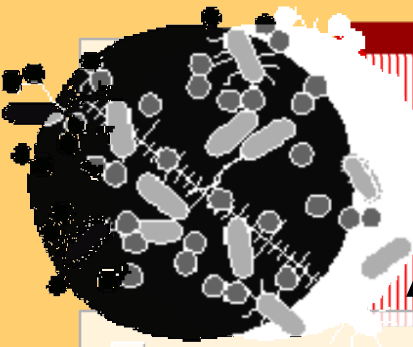


ROUTES OF ENTRY

- **Mucosal**
- **Perenteral**
- **Perinatal**



HEPATITIS



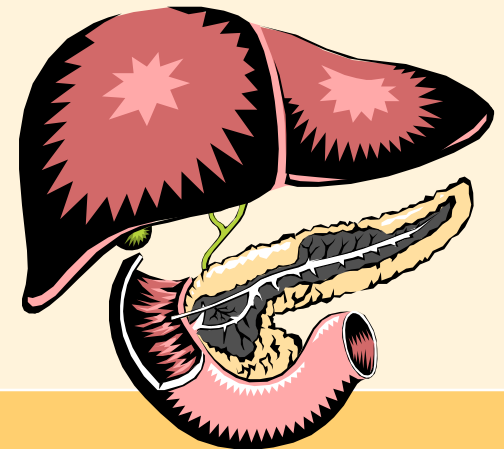
MECHANISM OF ACTION

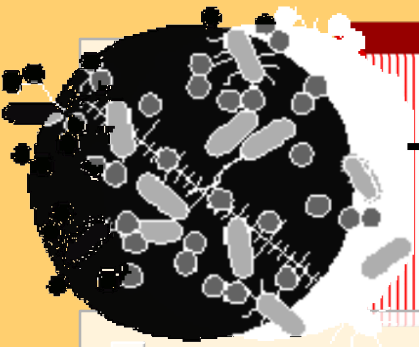
■ **Infects the liver**

- Causes swelling
- Can lead to cirrhosis

■ **Function of liver:**

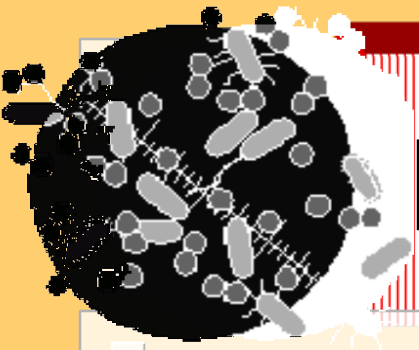
- Removes drugs and poisons from blood
- Helps stop bleeding
- Fights infection





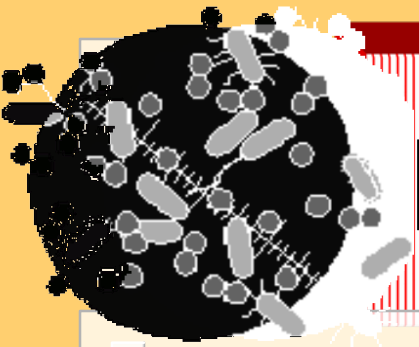
THE LIVER

- Symptoms of infection include:
 - **Fatigue**
 - **Feeling sick to stomach**
 - **Fever**
 - **Stomach pain**
 - **Dark urine**
 - **Light-colored stools**
 - **Jaundice**



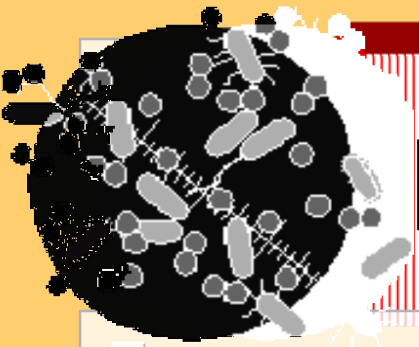
DIFFERENT TYPES

- Hepatitis A
- Hepatitis B
- Hepatitis C
- Hepatitis D
- Hepatitis E



HEPATITIS TYPES

	A	B	C
Source of virus	feces	blood/ blood-derived body fluids	blood/ blood-derived body fluids
Route of transmission	fecal-oral	perenteral mucosal	perenteral mucosal
Chronic infection	no	yes	yes
Prevention	pre/post- exposure immunization	pre/post- exposure immunization	blood donor screening; risk behavior modification

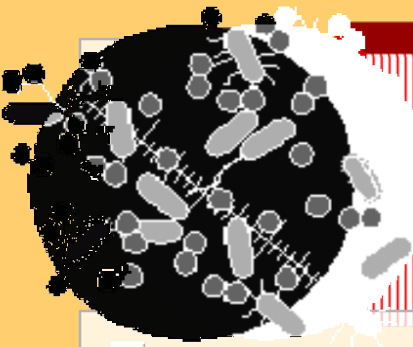


HEPATITIS TYPES

	D	E
Source of virus	blood/ blood-derived body fluids	feces
Route of transmission	perenteral mucosal	fecal-oral
Chronic infection	yes	no
Prevention	pre/post- exposure immunization; risk behavior modification	ensure safe drinking water



HEPATITIS-B VIRUS
(HBV)

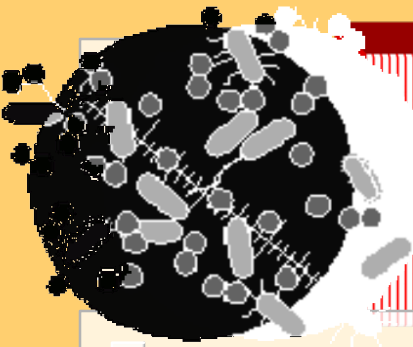


CONCENTRATION OF HBV IN VARIOUS BODY FLUIDS

High	Moderate	Low/Not Detectable
blood	semen	urine
serum	vaginal fluid	feces
wound exudates	saliva	sweat
		tears
		breast milk

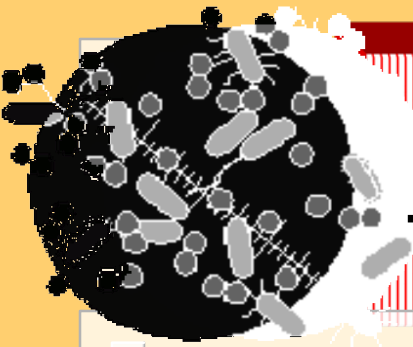


**HEPATITIS-C VIRUS
(HCV)**



HEPATITIS-C VIRUS (HCV)

- Infects the liver
- Symptoms
- Rarely perinatal
- Leading cause of liver transplants
- Routine blood screening
 - Since 1990
- NO pre-vaccine developed



HCV TRANSMISSION

- Perenteral

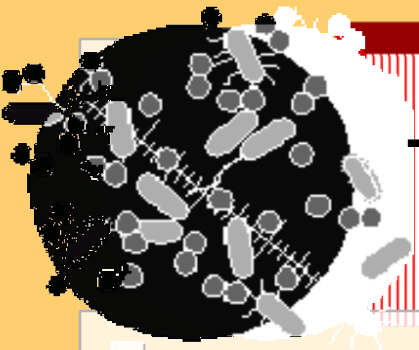
- Therapeutic

- While being treated

- Organ transplants, blood transfusions, etc...

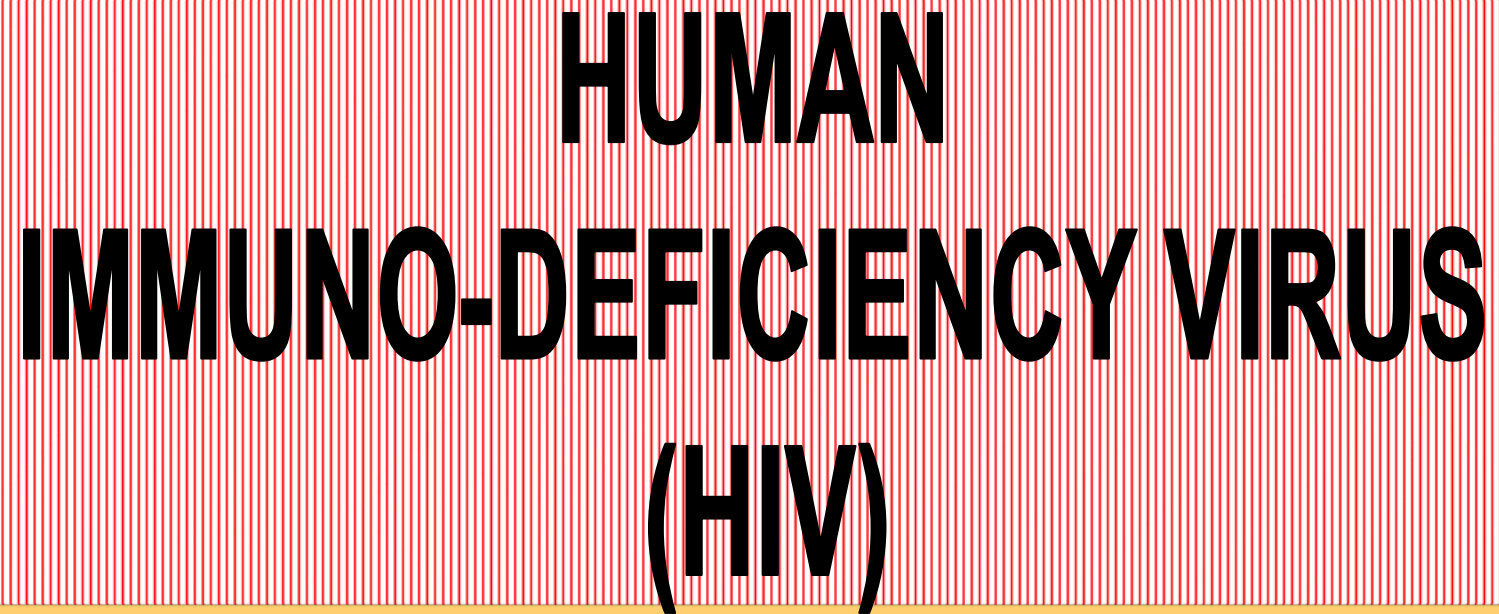
- Occupational

- While performing assigned work

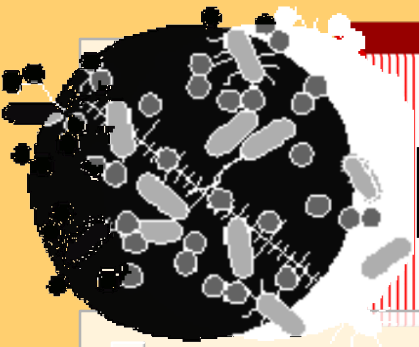


TRANSMISSION

- Mucosal
 - Perinatal
 - Sexual

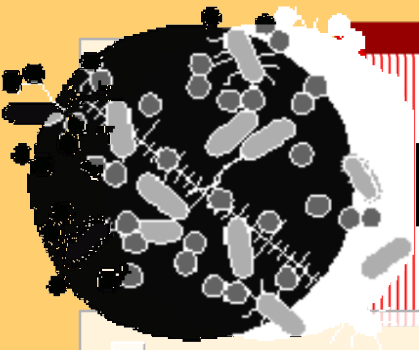


**HUMAN
IMMUNO-DEFICIENCY VIRUS
(HIV)**



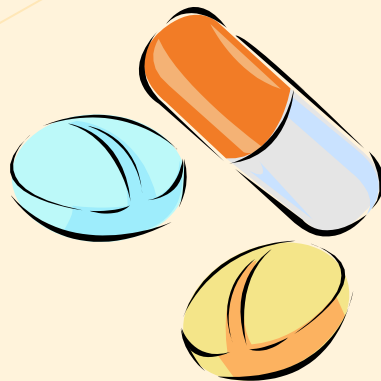
HIV

- **Very fragile virus**
- **Causes Acquired Immuno-Deficiency Syndrome (AIDS)**
 - **Fatal disease**
- **It may lay dormant**



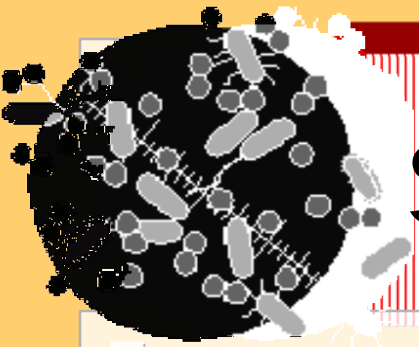
HIV (cont'd)

- **Attacks immune system**
 - **Suppresses**
- **No pre-vaccine available**
- **Post-exposure treatment is available**





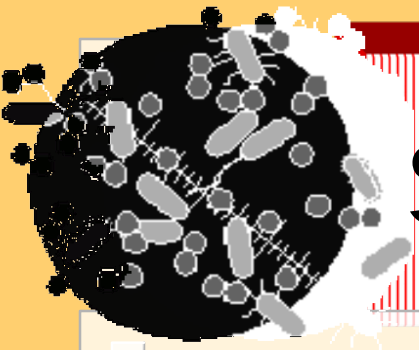
PREVENTIVE
MEASURES



SAFETY TIPS...

- 1. Never share needles
- 2. Get vaccinated for Hepatitis A & B
- 3. Do not share personal care items
- 4. Always use universal precautions



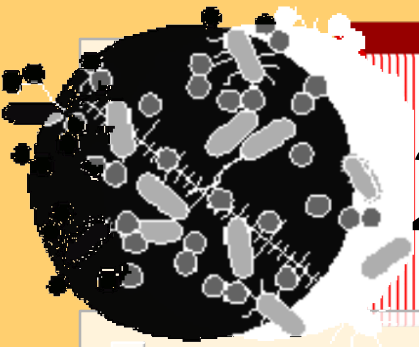


SAFETY TIPS...

- 5. Limit tattoos & body piercing
- 6. Limit unprotected and multiple sexual partners
- 7. If infected, do not donate blood, organs, or tissue



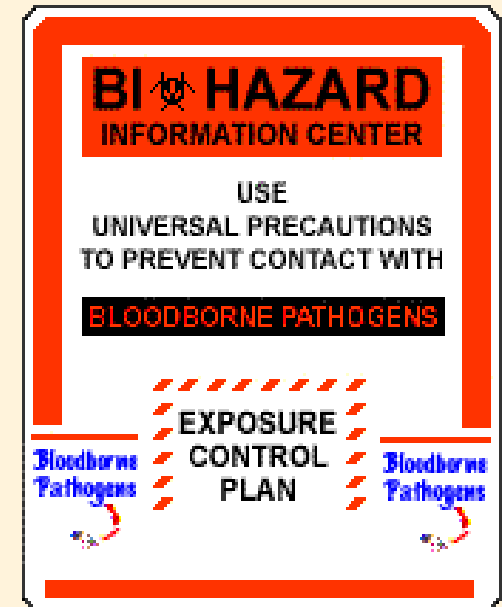
OSHA STANDARD



29 CFR 1910.1030

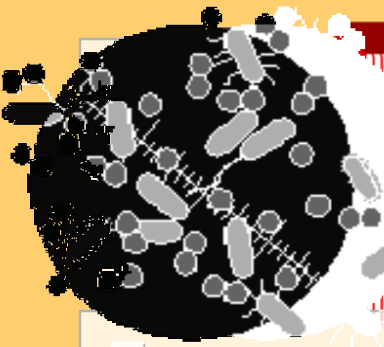
■ Scope

- Applies to all persons occupationally exposed






**ORM
REQUIREMENTS**

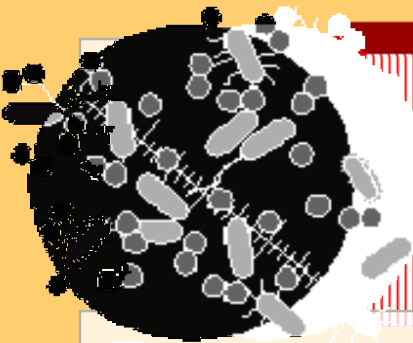


Question #10 of the Safety Audit...

- “Does the agency have a written Blood-borne Pathogens Program that includes: (1) exposure determination, (2) methods of compliance, (3) work practice controls, (4) training, and (5) medical evaluation for affected employees? Have all of the employees received training in the program?”

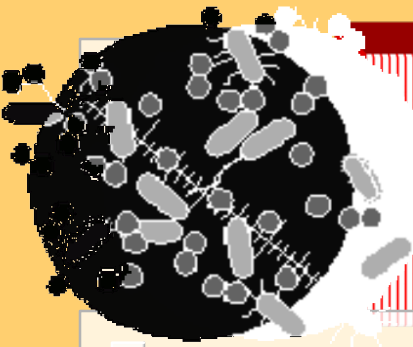


**EXPOSURE
CONTROL PLAN**



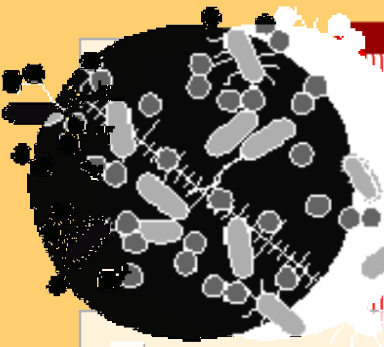
1. EXPOSURE DETERMINATION

- Occupational Exposure
 - Reasonably anticipated
 - While performing assigned duties
 - Disregard PPE usage



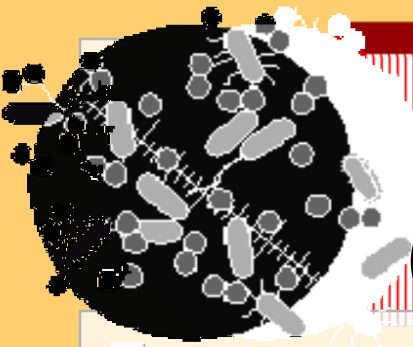
1. EXPOSURE DETERMINATION

- 1. Review all job classifications
- 2. Develop 2 lists
 - All exposed
 - Some exposed
- 3. Indicate high-risk duties



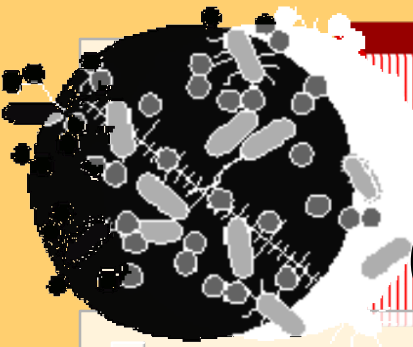
COMMON HIGH-RISK OCCUPATIONS

- **Physicians, surgeons**
- **Dentists, oral surgeons**
- **Medical, dental, & nursing students**
- **Dental hygienists and dental nurses**
- **Laboratory & blood bank personnel**



MORE HIGH-RISK OCCUPATIONS

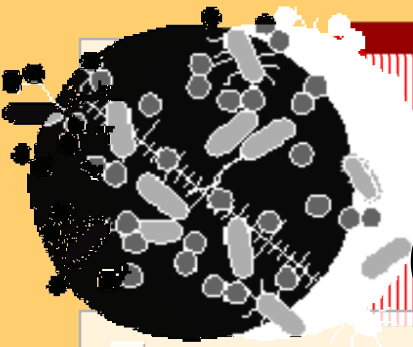
- **Hospital workers who handle blood, blood products, or patient specimens**
- **Nurses**
- **Paramedical and ambulance personnel**
- **Cleaning staff who handle patient waste**



MORE HIGH-RISK OCCUPATIONS

- **First aiders**
- **Morticians and embalmers**
- **Public safety workers**
- **Instructors/professors**
Ex: Laboratories
- **Coaches**





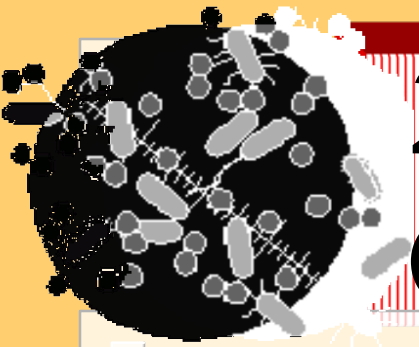
MORE HIGH-RISK OCCUPATIONS

- **Trainers**
- **Infirmary personnel**
- **Maintenance employees**
- **Custodial employees**
- **Kitchen staff**



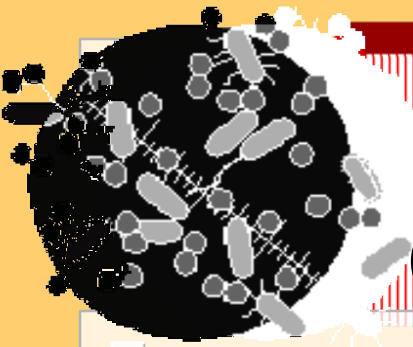
EXAMPLE

- Classification:
 - Maintenance Repairman
- Job duties
 - Repair mechanical equipment
 - Repair electrical equipment
 - Perform minor construction work
 - **Maintain sewer system**
- Possible exposure???



2. Methods of Compliance

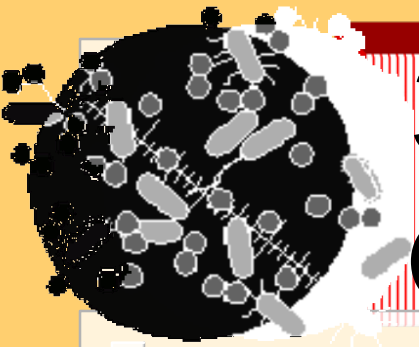
- Mandate universal precautions
- Mandate employee hygiene practices
 - Ex: Hand-washing
- Mandate PPE usage
- Prohibit re-capping of needles
- Mandate Good Laboratory Practices



3. METHODS OF CONTROL

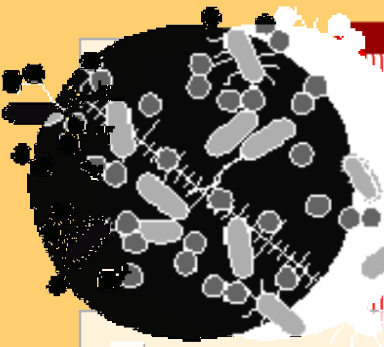
- A. Engineering controls definition

- Examples:
 - Self-sheathing needles
 - Puncture-resistant disposal containers
 - Resuscitation devices
 - Ventilation devices



3. METHODS OF CONTROL

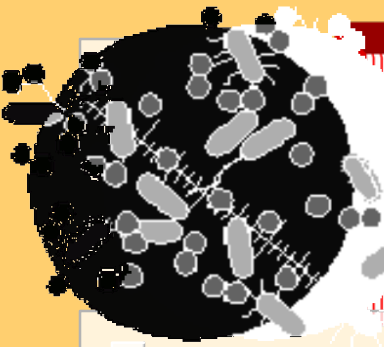
- B. Work practice controls definition
- Sample concerns to address:
 - Universal precautions
 - Restrictions on:
 - eating,
 - drinking,
 - applying cosmetics or lip balm,
 - and handling contact lenses



MORE SAMPLE CONCERNS...

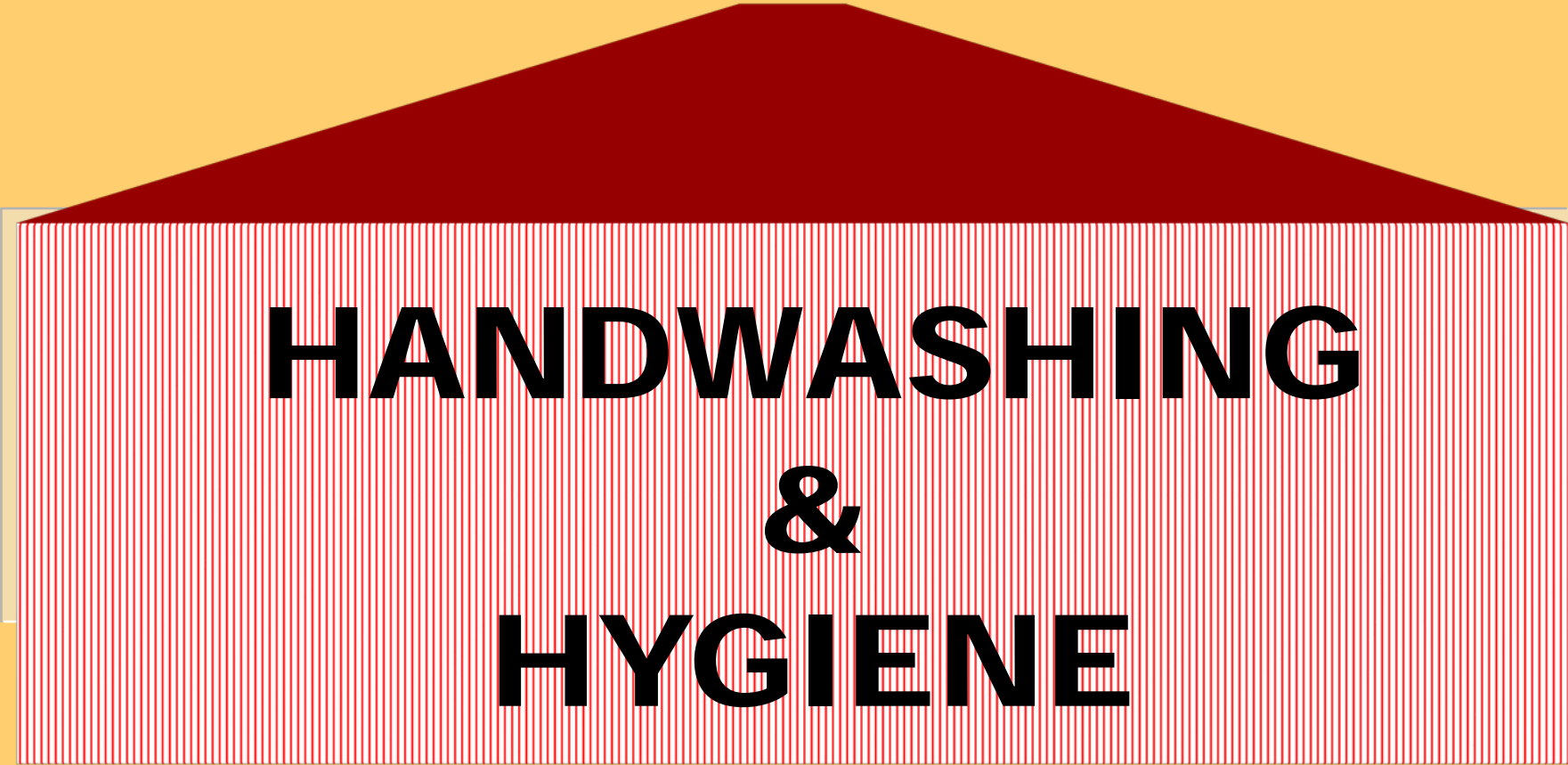
- **Mouth pipetting**
- **Storage of food and/or drinks**
- **Hand-washing facilities**
- **Checking and decontaminating equipment**



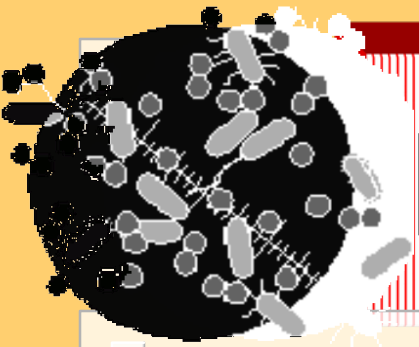


MORE SAMPLE CONCERNS...

- **Proper decontamination**
- **Adequate disposal**
- **Bending or re-capping needles**

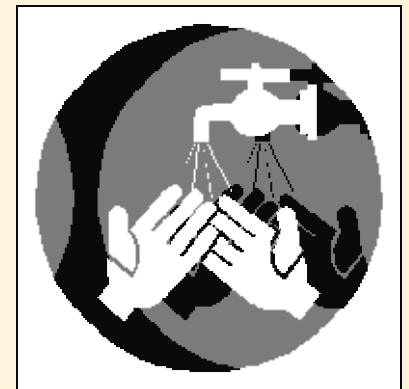


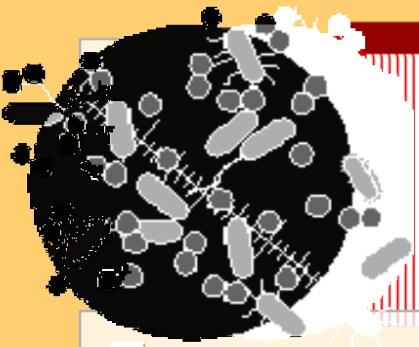
HANDWASHING
&
HYGIENE



Hand Washing

- **Easy, effective, and cheap**
- **Wash:**
 - After exposure incident
 - After removing gloves
- **Use antibacterial soap**
- **Don't use harsh, abrasive soaps**



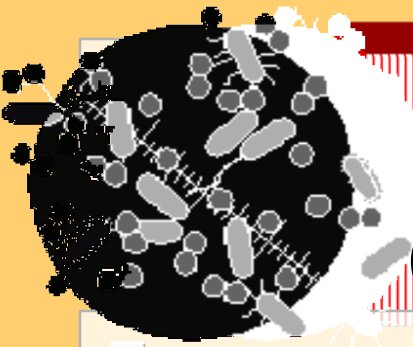


Hygiene Rules

In affected areas, **NEVER:**

- Eat
- Drink
- Smoke
- Apply cosmetics
- Handle contact lenses
- Store consumables





3. METHODS OF CONTROL

■ C. Personal Protective Equipment (PPE)

- Purpose

■ Examples

- Gloves

Face shields

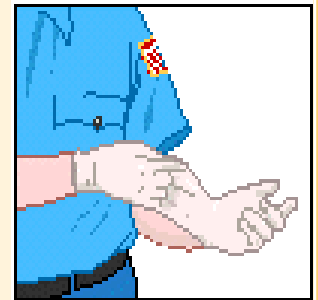
- Gowns/aprons

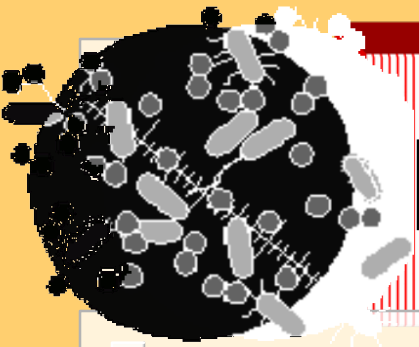
Masks

- Laboratory coats

Other eye protection

- Barriers/devices

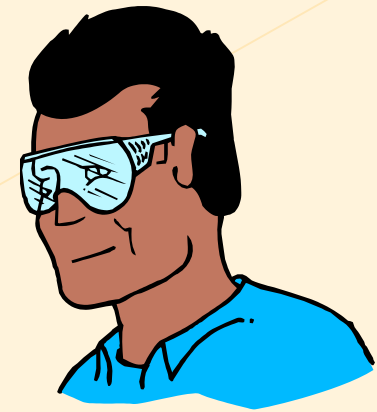


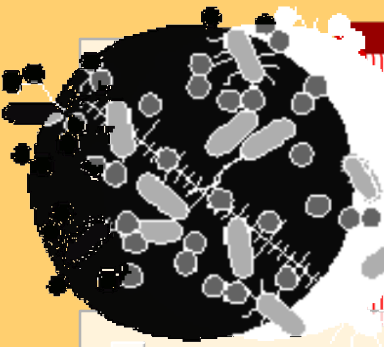


PPE PROVISIONS

■ Must be...

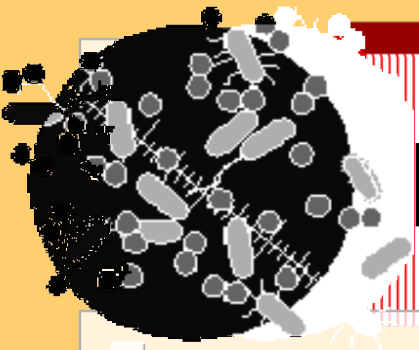
- ...Free of cost
- ...Appropriate size
- ...Hypo-allergenic, if needed
- ...Accessible
- ...Required
- ...Properly laundered, repaired or replaced, as needed, or discarded





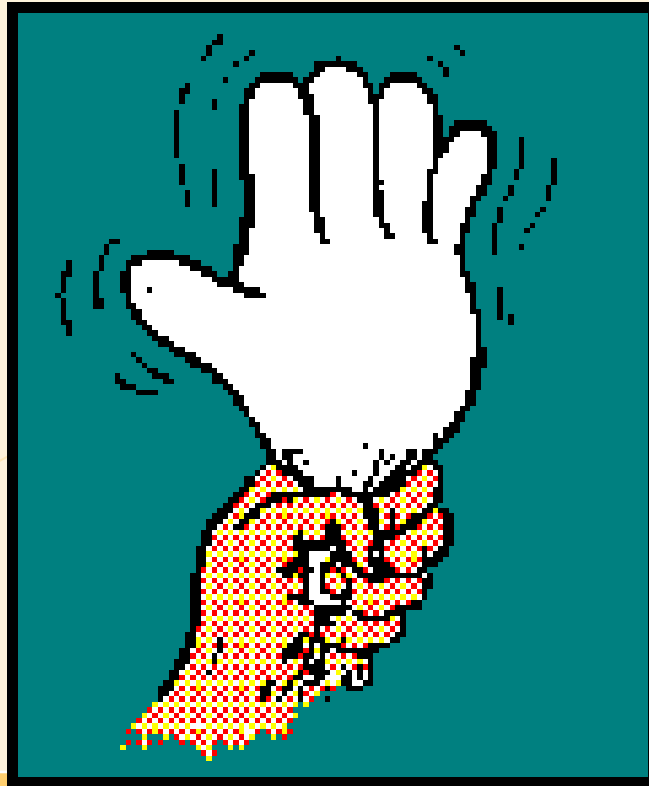
HANDLING & USE OF PPE

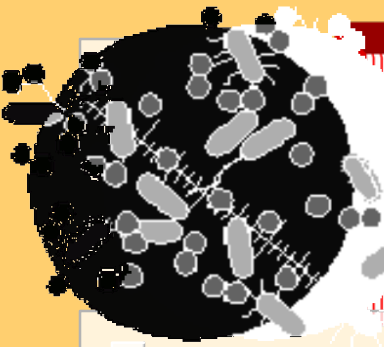
- Remove
 - Before leaving work area
 - After contamination occurs
- Place used PPE in designated areas
- Wear appropriate gloves
- Replace when necessary



DEMONSTRATION

- Remember to inspect the gloves **FIRST!!!**

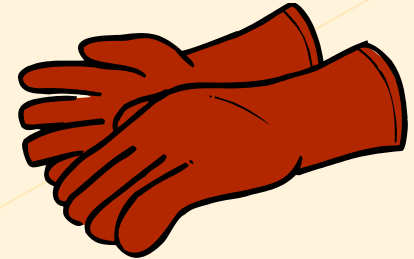




HANDLING & USE OF PPE

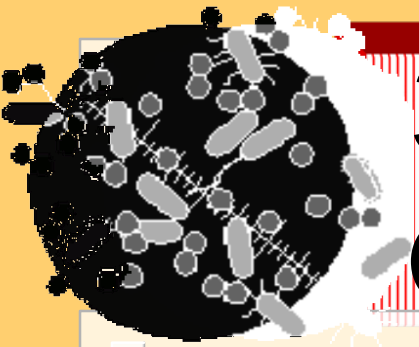
- **Utility gloves**

- Decontaminate or discard



- **Wear appropriate face & eye protection**

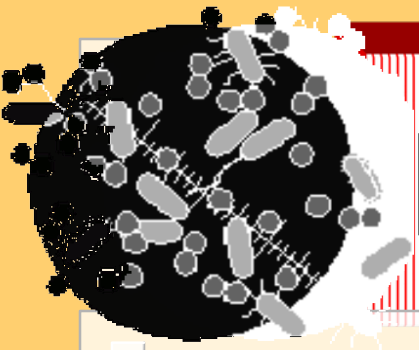
- Mask with glasses



3. METHODS OF CONTROL

■ D. Housekeeping

- Clean & sanitary environments required
- Implementation:
 - Develop a cleaning schedule
 - Identify methods of decontamination
 - Indicate procedures to be performed



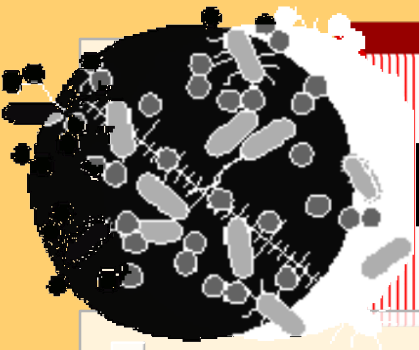
DEFINITIONS

■ Sterilization

- Definition
- Ex: Autoclave

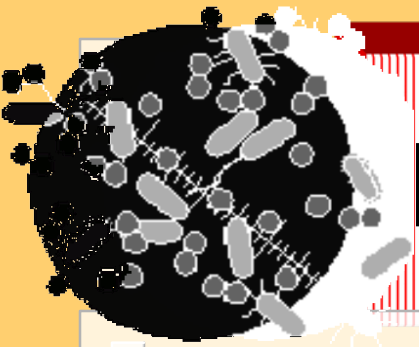
■ Decontamination

- Definition
- Ex: Bleach & water solution



HOUSEKEEPING

- Decontaminate when???
- After procedures resulting in contamination
- After any spill of blood or OPIM
- At the end of the work shift



HOUSEKEEPING

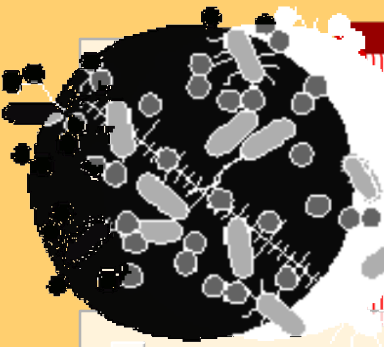
- Decontaminate how???
- Solution of water and household bleach (10:1 ratio)
 - 1 part bleach to 9 parts water
 - Or EPA-registered disinfectant
- What about Lysol?



HOUSEKEEPING

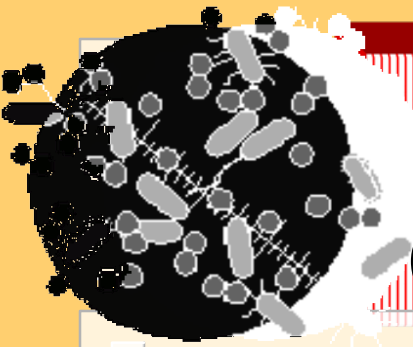
- Preventive measures
 - Reusable receptacles
 - Mechanical devices
 - Ex: tongs, forceps, solidifier, brushes, etc...
 - Never use hands
 - Properly manage sharps disposal containers





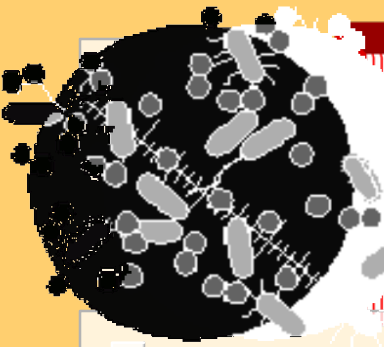
What is wrong with this picture???





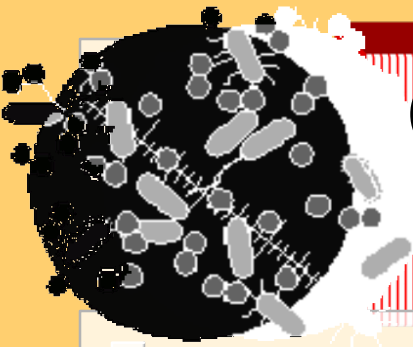
3. METHODS OF CONTROL

- E. Proper storage & disposal
 - Covered under Chapter XXVII of the Louisiana Sanitary Code



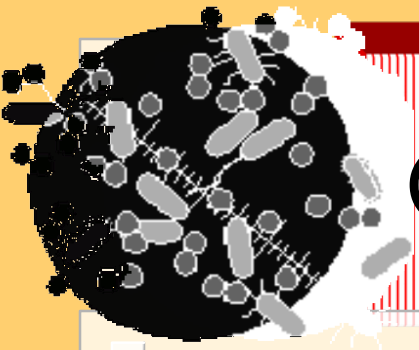
CONTAMINATED CLOTHING

- Remove clothing
- Use Universal Precautions
- Place in proper bags or containers



CONTAMINATED LAUNDRY

- Handle as little as possible
- Handle with PPE
- Bag at its location of use
- Never sort or rinse in its area of use
- Never take contaminated laundry home!!



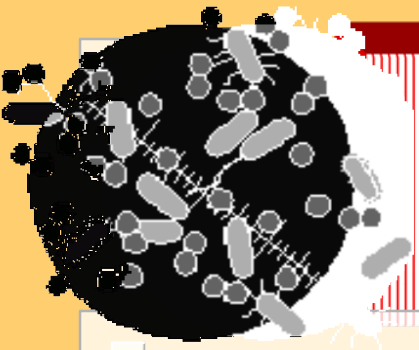
CONTRACTED SERVICE

- If laundry responsibilities are contracted to private vendors, ensure proper labeling and containment

WASTE STORAGE & DISPOSAL

- Use leak-proof containers for PIM
- Sharps disposal containers should be...
 - Closable
 - Puncture-resistant
 - Appropriately labeled or color-coded
 - Leak-proof

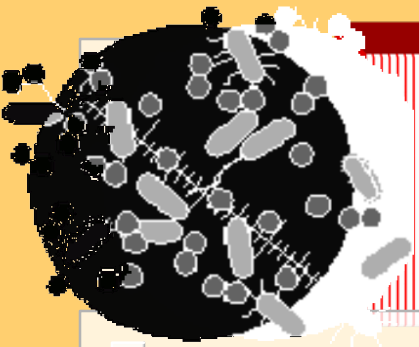




LABELS

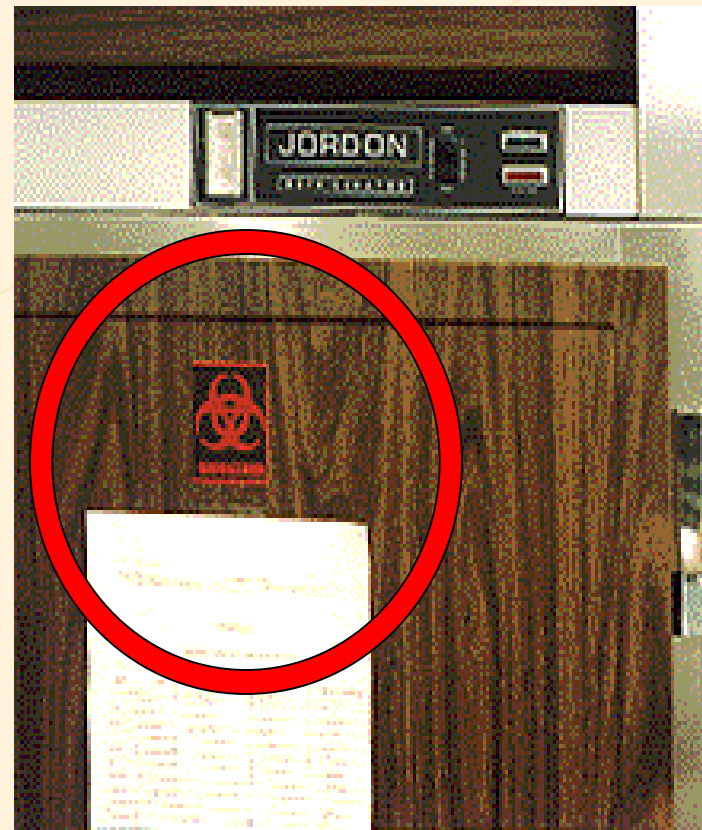
- Specific requirements

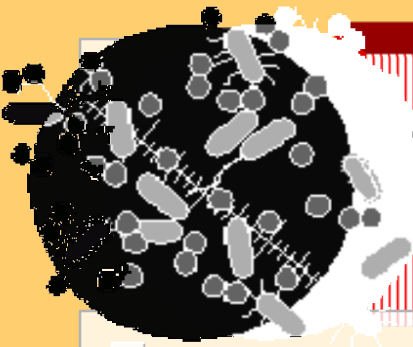




LABELS

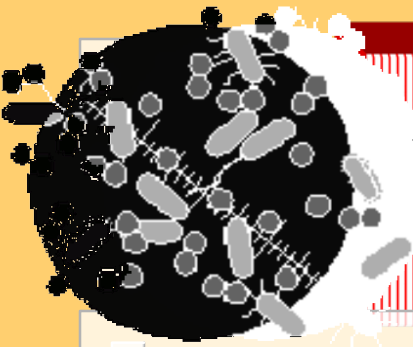
- Include on:
 - Regulated waste
 - Affected refrigerators and freezers
 - Storage containers
 - Shipping containers





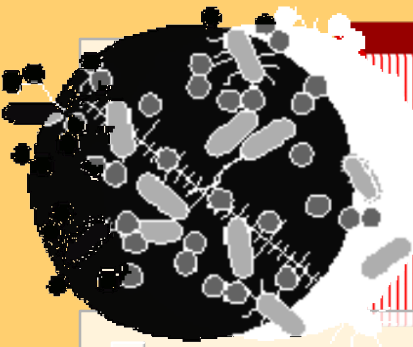
4. TRAINING REQUIREMENTS

- New employees
 - At the time of initial assignment
- Existing employees
 - High-risk (annually)
 - Content
 - Others (once every 3 years)
- When tasks modified
- New tasks



5. POST-EXPOSURE EVALUATION

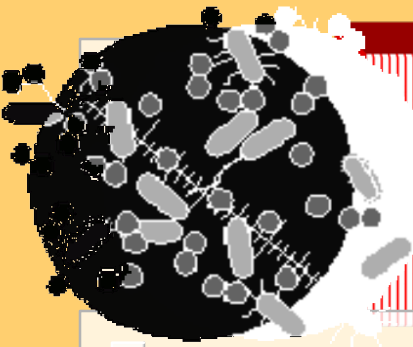
- Should include:
 - Written procedure for medical assistance
 - Documentation requirements
 - Provisions for HBV, if implemented
 - Confidentiality requirements



POST-EXPOSURE PROCEDURE

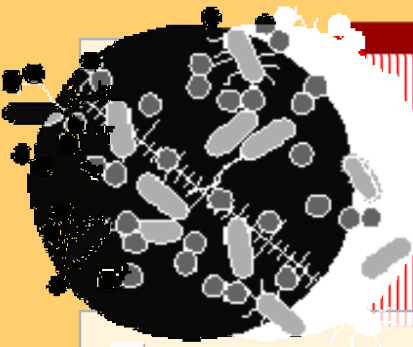
- 1. Wash with non-abrasive antibacterial soap
- 2. Report the exposure
- 3. Follow procedures for medical assistance





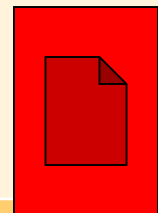
POST-EXPOSURE PROCEDURE

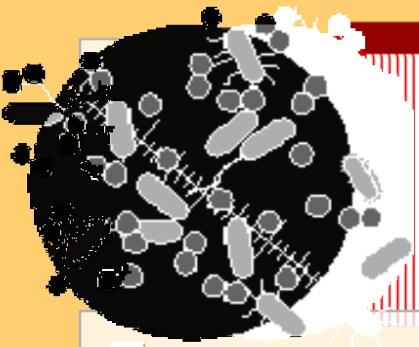
- 4. Document the exposure incident
- 5. Identify the source individual
 - Obtain consent
 - Test source individual's blood A.S.A.P.
- 6. Provide test results
- 7. Explain disclosure laws and regulations



POST-EXPOSURE PROCEDURE

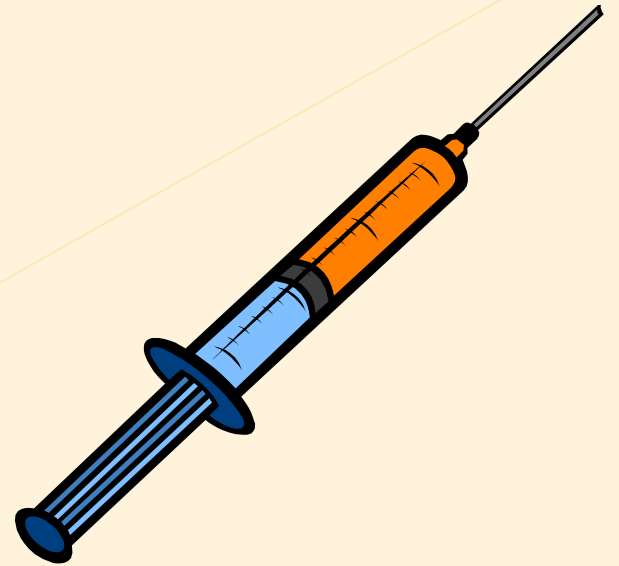
- 8. Obtain consent
 - HBV & HIV tests
- 9. If consent denied...
 - Preserve sample for at least 90 days
 - Complete a declination form
- 10. If consent later..
 - Implement testing A.S.A.P.
- 11. Provide counseling and vaccine

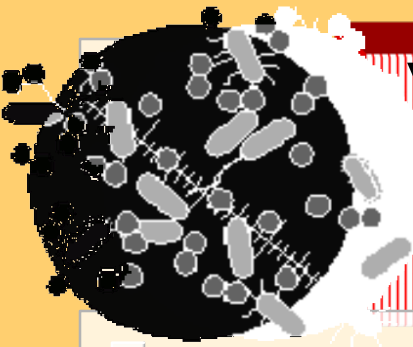




HBV Vaccine

- Availability
 - Exposure list
 - If in policy...Do it!!
- Free of charge
- Pre-vaccination training

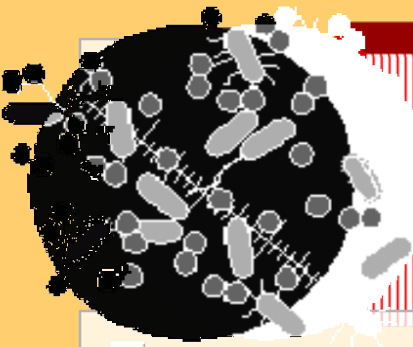




VACCINATION PROCESS

- ❖ Series of three injections
 - ❖ Initial injection
 - ❖ Second is one month after the first
 - ❖ Third is five months after the second
- ❖ Boosters required??
 - ❖ Not if immune system stays healthy

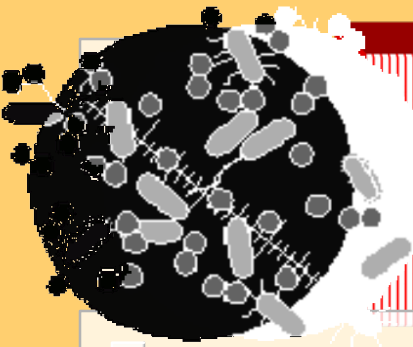




POST-EXPOSURE PROCEDURE

- 12. Provide a copy of:
 - OSHA standard
 - Relevant job duties
 - Results of the source individual's blood tests
 - All relevant employee medical records

- ...to the attending physician

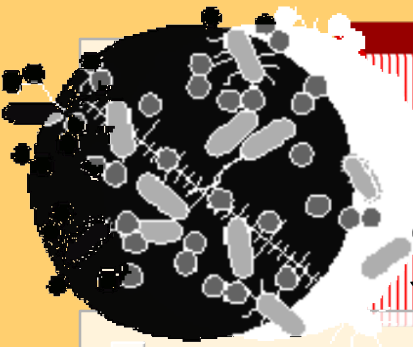


POST-EXPOSURE PROCEDURE

- 13. Provide a copy of the physician's written opinion
 - Within 15 days
 - Limitations

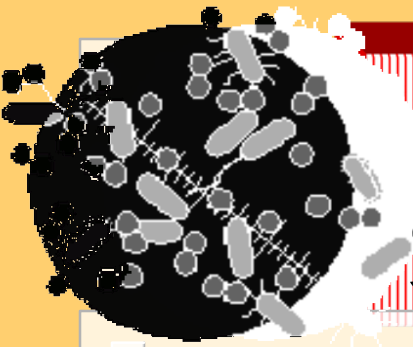


RECORD-KEEPING
REQUIREMENTS



MEDICAL RECORDS SHOULD INCLUDE...

- 1. Employee's name & SS number
- 2. Employee's HBV vaccination status
- 3. Results of medical examinations, tests, and evaluations



MEDICAL RECORDS SHOULD INCLUDE...

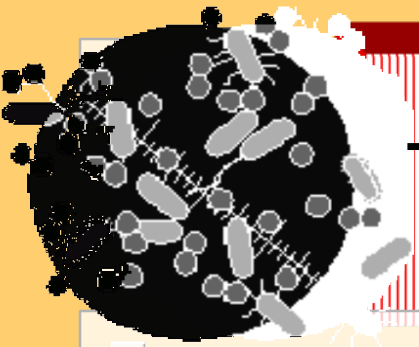
- 4. Follow-up procedures
- 5. Physician's written opinion
- 6. A copy of the information provided to the physician



CONFIDENTIALITY

- Keep records confidential
 - Term of employment + 30 years!!!
- Separate & secure
- Remain available to the affected employee



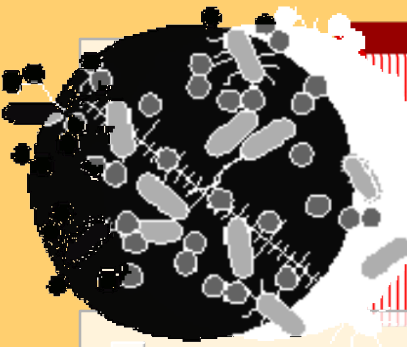


TRAINING RECORDS

- Should include...
 - Training dates
 - Authentic signatures
 - Content or summary of the training
 - Names and qualifications of the trainer(s)
 - Names and job titles of trainees
- Retention time
- Availability



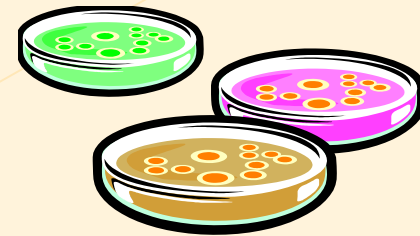
SPECIAL
REQUIREMENTS



HIV & HBV RESEARCH LABS AND PRODUCTION FACILITIES

■ These requirements apply if you...

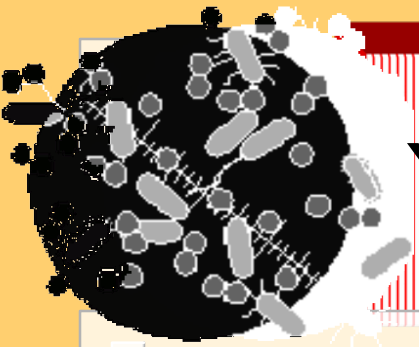
- Culture,
- Produce,
- Concentrate,
- Experiment with, or
- Manipulate HIV & HBV



■ Exclusion:

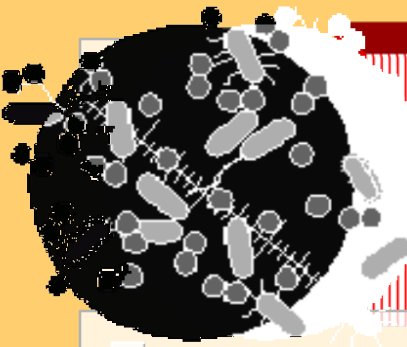
- **Does NOT apply to clinical or diagnostic labs**





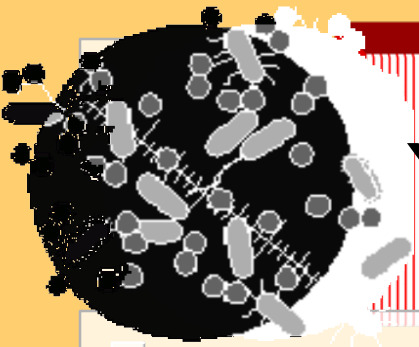
YOU MUST...

- 1. For labs:
 - Hand and eye washing facility
 - Autoclave
- 2. For **production** facilities:
 - Isolate properly
 - Proper ventilation system
 - Autoclave



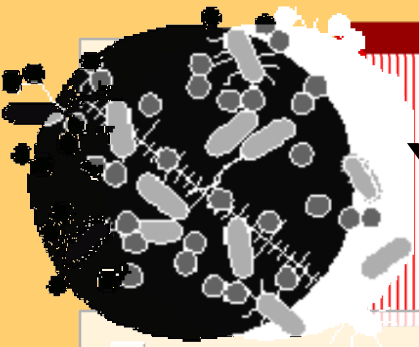
MORE PRODUCTION FACILITY PROVISIONS...

- A sink
 - Foot, elbow, or automatically operated
 - Near an exit door
- An eyewash facility
- Water-resistant, sealable surfaces
 - Walls, floors, and ceiling



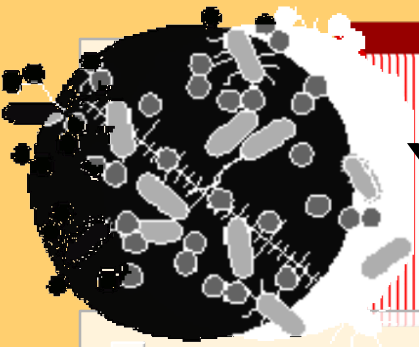
YOU MUST ALSO...

- 3. Process regulated waste before disposal
- 4. Keep doors closed
- 5. Use approved storage containers
- 6. Authorize entry to work area
- 7. Use proper signage



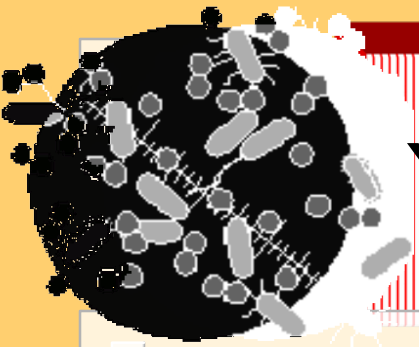
YOU MUST ALSO...

- 8. Use containment devices for work area
- 9. Install and certify containment devices annually
- 10. Wear appropriate PPE
- 11. Decontaminate before laundering
- 12. Protect vacuum lines
 - Check routinely
 - Provide maintain/repairs



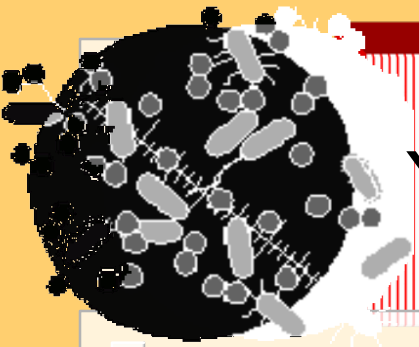
YOU MUST ALSO...

- 13. Use proper syringes
- 14. Never..
 - bend,
 - shear,
 - replace in the sheath guard, or
 - remove ...a used needle from the syringe
- 15. Use puncture-resistant containers




YOU MUST ALSO...

- 16. Process sharps before reuse or disposal
- 17. Report all spills and accidents immediately
- 18. Adopt an ECP
- 19. Use appropriate PPE

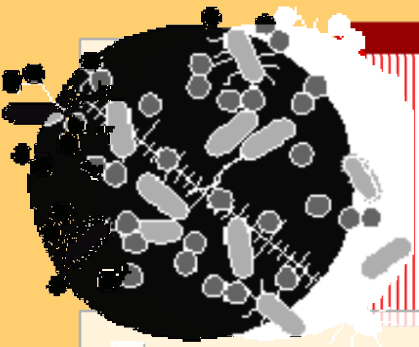


YOU MUST ALSO...

- Provide initial training
 - Site-specific microbiological practices
 - Techniques,
 - Operations, and
 - Proper handling of pathogens and cultures
- Only allow proven competent employees to perform work

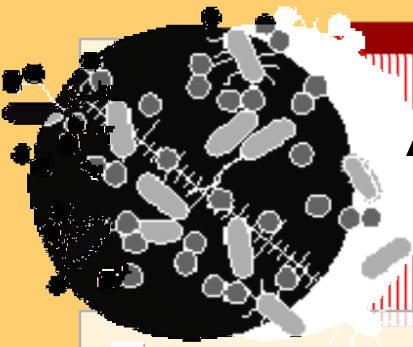


**AGENCY
STRATEGY**



It is this easy...

- 1. Develop a list of employees with exposure
- 2. Develop/revise agency's Exposure Control Plan
- 3. Train employees
- 4. Implement the plan
- 5. Revise plan as needed



AVAILABLE RESOURCES...

- Federal OSHA website:
 - www.osha.gov
- National Center for Disease Control & Prevention
 - www.cdc.gov
- Louisiana Department of Health and Hospitals
 - www.dhh.state.la.us
 - Access the Office of Public Health