


BLOODBORNE DISEASES

Prevention of
transmission for
school staff



MASSACHUSETTS DIVISION OF OCCUPATIONAL SAFETY

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OSHA STANDARD ON BLOODBORNE DISEASES

- OSHA Bloodborne Pathogens standard that addresses means of prevention issued in December 1991 - took full effect in 1992
- Standard was amended in 2001



OSHA IN MASSACHUSETTS

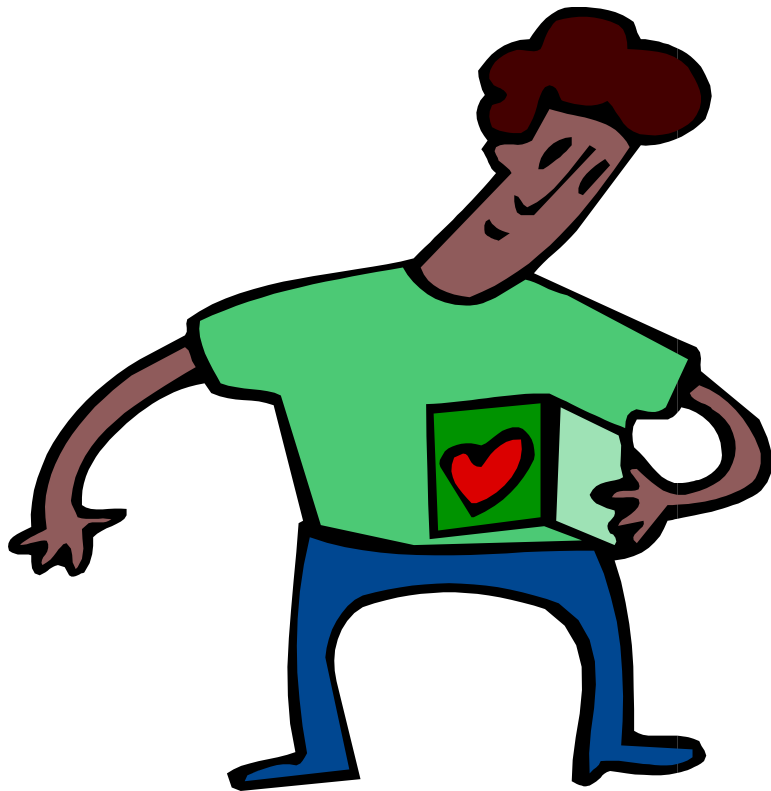
- OSHA does not cover public sector workplaces in Massachusetts
- OSHA standard is a standard of care, however
- significant risk of liability if the standard isn't followed & transmission of disease occurs

MASSACHUSETTS DIVISION OF OCCUPATIONAL SAFETY (DOS)



- DOS covers municipal and county workers via M.G.L.. Chapter 149.
- Interpretation by DOS is that, to meet the intent of Ch.149 section 6, OSHA standards should be followed as a minimum for county and municipal workplaces (including schools).

BLOODBORNE: DEFINITION



- Bloodborne diseases:
- potentially transmitted when an infected person's body fluids somehow get inside another person's body

BLOODBORNE DEF. (CONT'D)



- Bloodborne diseases:
- not transmitted through casual contact - won't get them by shaking an infected person's hand or by using the same bathroom or kitchen facilities

BLOODBORNE DISEASES: EXAMPLES

- Examples of bloodborne diseases:
- Hepatitis B
- Hepatitis C
- AIDS (HIV)

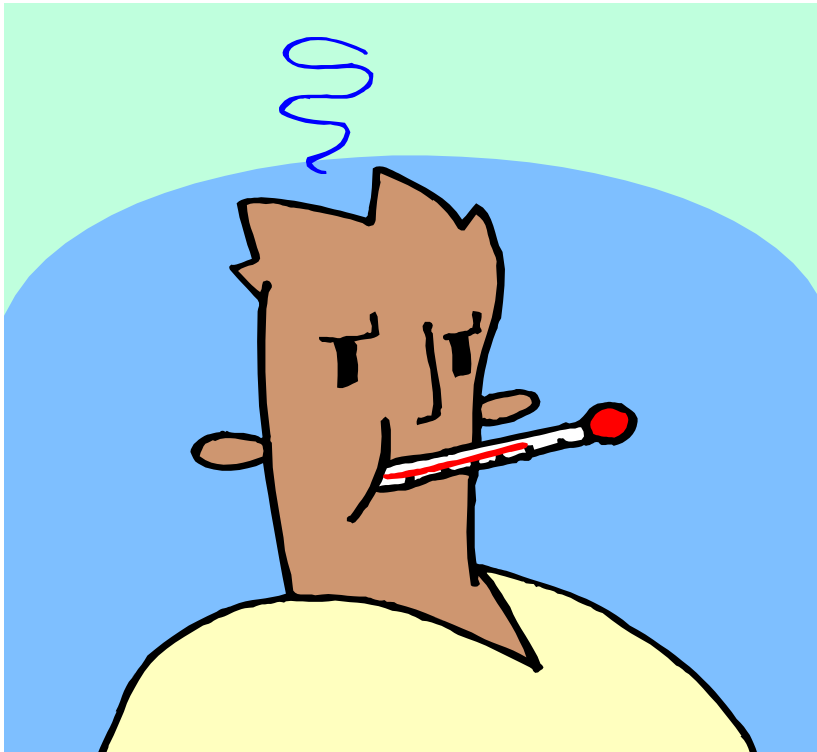


HEPATITIS B (HEP B)

- Hep B: inflammation of the liver caused by the Hepatitis B virus
- Disease is not always evident- can go misdiagnosed or undiagnosed
- Preventive vaccine available



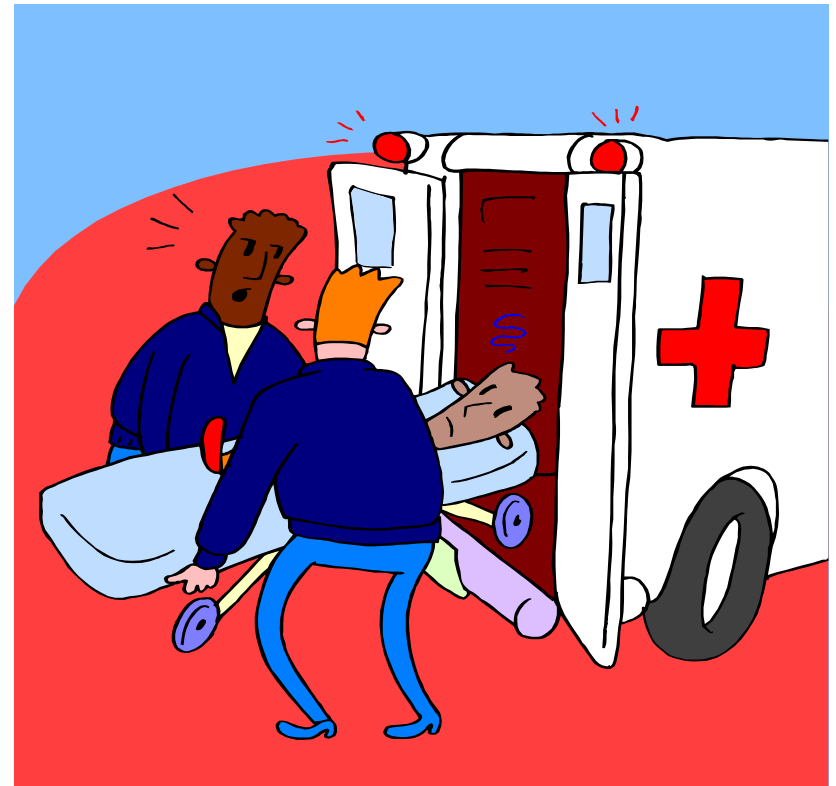
HEPATITIS B: SYMPTOMS



- fatigue
- loss of appetite
- fever
- achy muscles, joints
- nausea, vomiting
- jaundice (yellowish color of skin)
- dark urine, light feces

HEPATITIS B

- May lead to cirrhosis or liver cancer
- some people who develop hepatitis B become chronic carriers - they remain potentially infectious to others for the rest of their lives



HEPATITIS C (HEP C)



- Currently, most common type of viral hepatitis in the United States
- Leading cause for need for liver transplants in the U.S.
- No cure
- No vaccine available

HEPATITIS C (CONT'D)

- Because the liver is the primary target organ, the signs and symptoms of hepatitis C would be similar to those of hepatitis B
- Signs and symptoms may take decades to show up – called the silent epidemic

HIV INFECTION



- HIV (Human immunodeficiency virus) or AIDS virus may lead to disease AIDS
- HIV attacks the immune system - a person becomes unable to fight off other infections
- No vaccine available
- Treatment is available

AIDS



- Symptoms, which may take years to show up, include:
- swollen lymph glands
- recurrent fever
- night sweats
- rapid weight loss
- fatigue
- other illnesses

TIME FRAME



- With any of these diseases, it is possible that at least some infected people may look and feel well, perhaps for years
- Despite this, they are still potentially infectious for others

TIMELINE : HIV INFECTION

- The blood test to determine whether a person is HIV+ will not show this immediately after infection.
- It takes about two weeks up to six months for a blood test to show positive.
- The test does not look at or measure the virus.
- The test “looks at” the antibodies that a person develops in response to the infection.

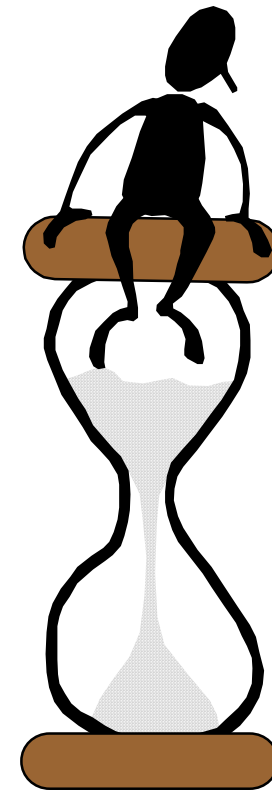
TIMELINE – HEPATITIS B

- Blood test for Hepatitis B does not become positive immediately either if a person becomes infected
- The Hepatitis B surface antigen can be detected as early as one to two weeks after infection



TIMELINE – HEPATITIS C

- Antibodies to Hepatitis C may take up to 3 months to detect in blood
- Another test, though, which detects the virus within 1 to 3 weeks after infection, may be available; ask your health care provider



BODY FLUIDS THAT POTENTIALLY TRANSMIT THESE DISEASES

- Blood
- Semen
- Vaginal secretions
- Breast milk
- Fluids that surround our internal organs:
 - cerebrospinal fluids
 - pericardial fluid
 - pleural fluid
 - synovial fluid
 - peritoneal fluid

DEFINITION OF DIFFERENT BODY FLUIDS

- Cerebrospinal fluid: fluid that surrounds the brain and the spinal column
- Pericardial fluid: fluid that surrounds the heart
- Pleural fluid: fluid that surrounds the lungs
- Synovial fluid: fluid that surrounds that joints
- Peritoneal fluid: fluid that surrounds the organs in the abdomen

BODY FLUIDS AND SUBSTANCES (CONT'D)

- Body fluids or substances that, **only if contaminated with blood**, would be considered potentially infectious. According to Centers for Disease Control and Prevention (CDC), these include:
- Saliva, urine, feces, vomitus, sweat, tears

SURVIVAL OUTSIDE THE BODY

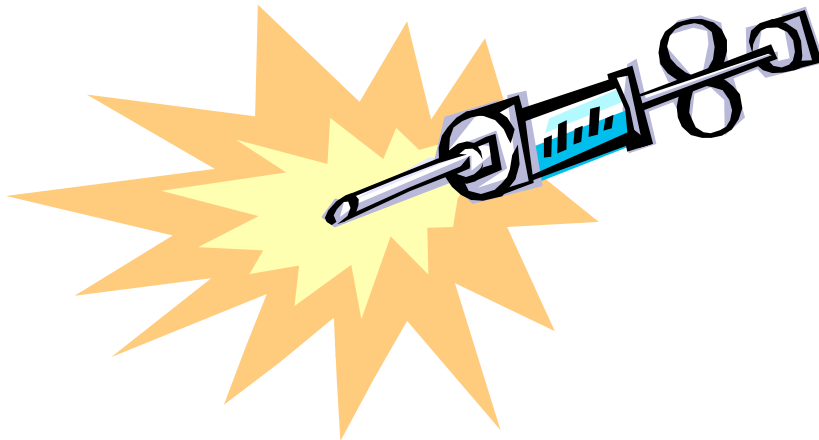


- These diseases may be transmitted indirectly
- This can happen when you touch an object or surface contaminated with blood or infectious materials and transfer them to your mouth, eyes, nose or opening in your skin.

SURVIVAL OUTSIDE THE BODY

- Hepatitis B virus may be able to survive even in dried blood on environmental surfaces for one to two weeks (maybe even longer)
- HIV begins to die off almost immediately once it is outside of the body (exposed to air)
- Hepatitis C virus - limited information exists

MODES OF TRANSMISSION (NON-OCCUPATIONAL)



- Transmission can occur only when an individual's infected body fluids get inside another person's body. This can happen by:
 - sexual contact
 - sharing needles (ex: drug needles, tattooing, body piercing, body mutilation)

MODES OF TRANSMISSION (OCCUPATIONAL)

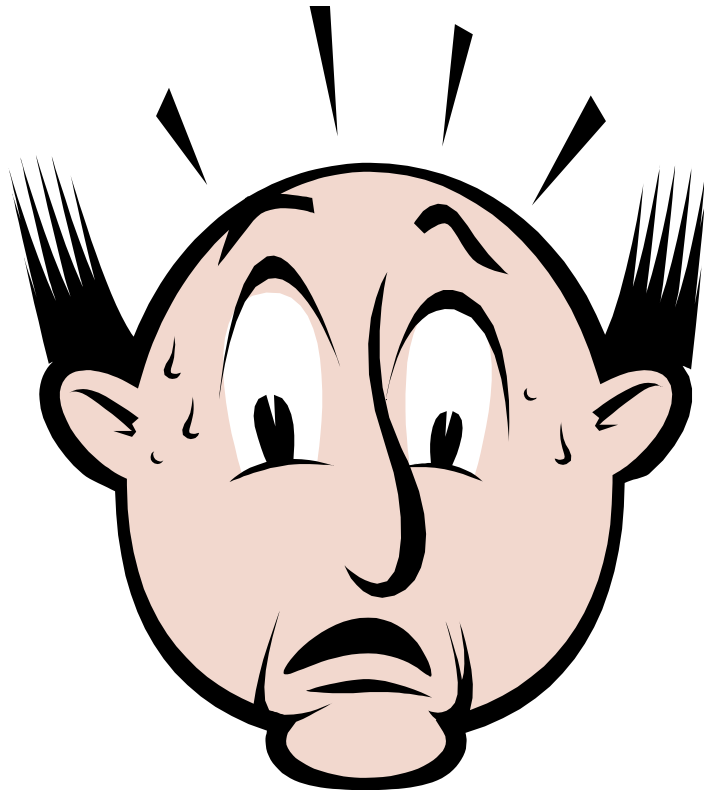


- For workers, there are generally three ways that transmission can occur:
 - opening in the skin
 - through the mucous membranes (eyes, nose, mouth)
 - needlestick

OPENING IN THE SKIN

- **The skin, if intact, is a good barrier.**
- But, if infected body fluids get into **broken** skin, there is a possibility for transmission.
- The risk is well under 1% if infected blood or body fluids get into an opening in the skin.
- Examples of an opening in the skin are:
 - a cut or a burn that has not healed
 - a rash where the skin is open

MUCOUS MEMBRANES

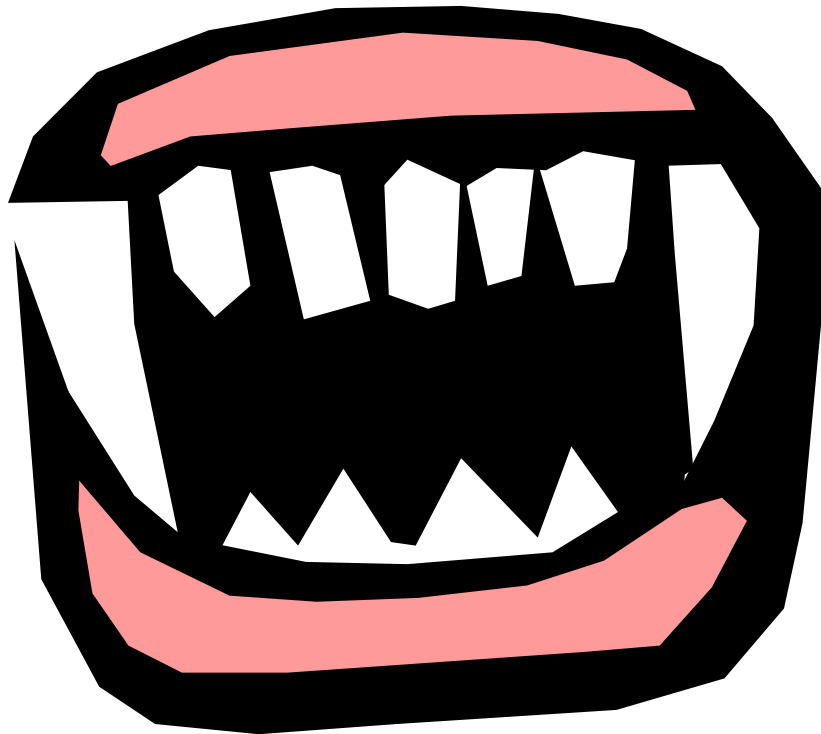


- If infected blood or other body fluids get splashed into the eyes, nose or mouth, there is a possibility (well under 1%) that a person could become infected.

NEEDLESTICKS AND INJURIES DUE TO OTHER SHARPS

- Sharps include: needles, razors, broken glass, sharp metal, knives, sewing needles, orthodontic wires, etc
- Risk of becoming HIV+ from a needle contaminated with HIV is about 0.3%.
- The risk of becoming Hep B+ from a needle known to be contaminated with Hep B+ is up to 30% (assuming that you have not been vaccinated against Hepatitis B)
- The risk for Hep. C is about 2%

MODES OF TRANSMISSION (CONT'D)

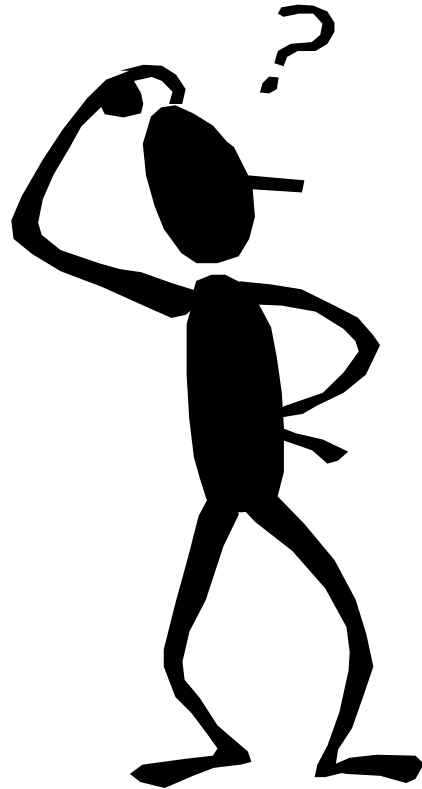


- There is evidence that Hep. B can be transmitted through a bite
- There is no evidence that the AIDS virus can
- Hepatitis C - no indication found at this time

SURVIVAL OUTSIDE THE BODY - REVIEW

- Hepatitis B virus may be able to survive even in dried blood on environmental surfaces for one to two weeks (maybe even longer)
- HIV begins to die off almost immediately once it is outside of the body (exposed to air)
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UNIVERSAL PRECAUTIONS



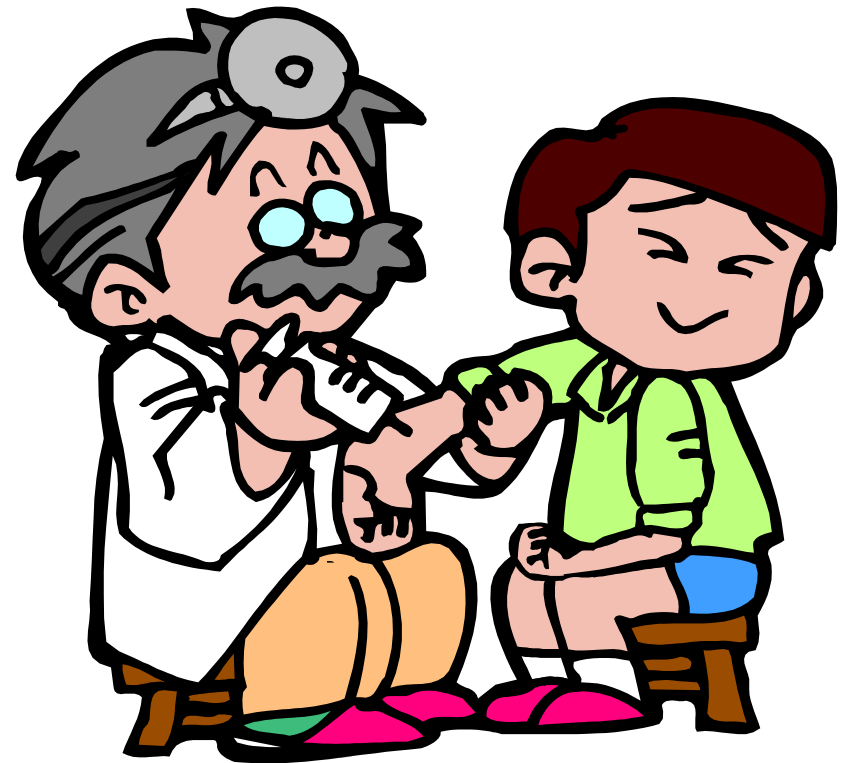
- In order to protect yourself and your families, consider **all persons** to be potentially infectious and take precaution.

BODY SUBSTANCE ISOLATION

- This is an alternative to universal precautions and is considered to be even more protective
- **All** body fluids or substances are considered to be potentially infectious regardless of whether there is visible blood mixed in or not

MEANS OF PREVENTION: HEPATITIS B VACCINE

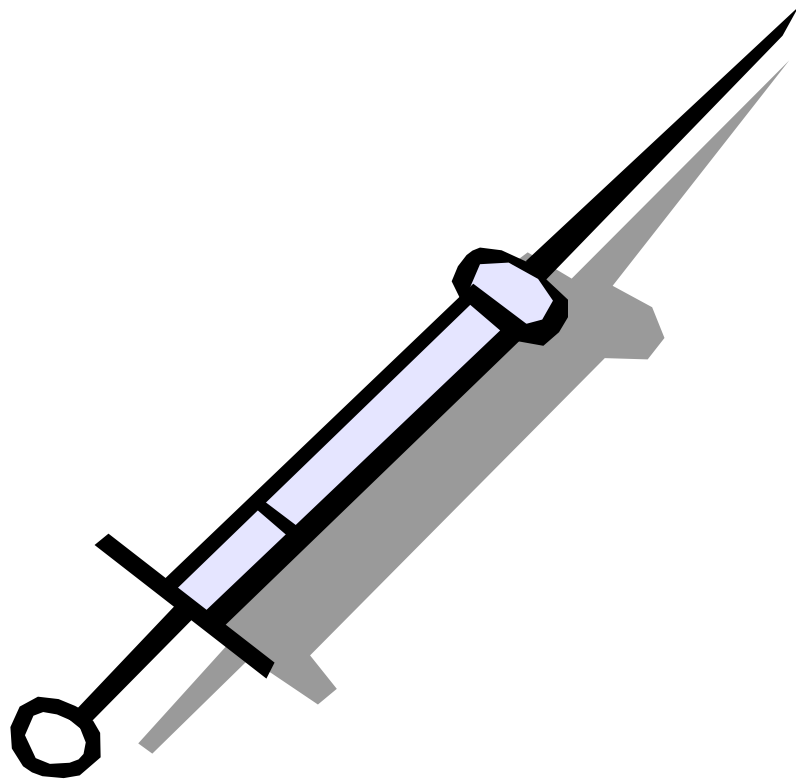
- Series of three shots
- If you get the first one today, the second would be one month from today, and the third would be four to six months after the first shot



HEPATITIS B VACCINE: TITRE

- The series of three shots is effective for about 90% of the population. The only way to know if you're protected is to have a blood test known as a titre done.
- CDC recommends that the titre be done four to eight weeks after the third shot; if it indicates a low level of protection, CDC recommends you receive the series of three shots again.

HEPATITIS B VACCINE: BOOSTER



- At the present time, CDC does not recommend a booster even if you received the series of shots several years ago.
- Whether this recommendation will change is not known.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Gloves to prevent skin contact with blood or other body fluids
- Available in different sizes and materials: latex, nitrile, vinyl.
- If a person is allergic to latex, use gloves of other material
- Gloves are removed inside out : don't touch outside of gloves with bare hands
- Wash hands after remove gloves



PPE: FACIAL PROTECTION

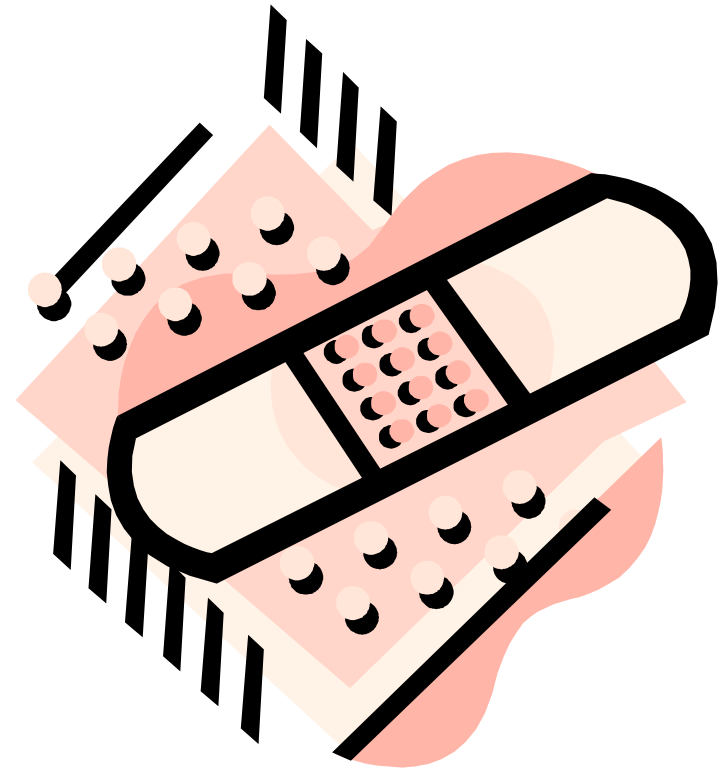
- If there is a potential for blood or other body fluids to splash into the mucous membranes (eyes, nose, mouth) then facial protection should be readily available and used.
- Facial protection could include either:
 - A disposable full face shield (or)
 - goggles and a surgical mask.

PPE: IMPERMEABLE GOWN OR APRON AND SHOE COVERINGS

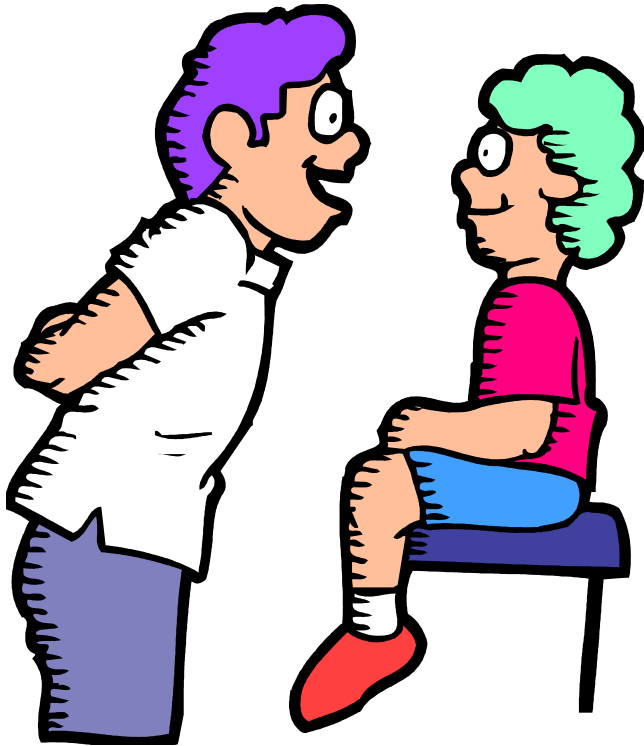
- Material of gown or apron must not permit blood or other body fluids to pass through or reach work clothes or uniforms.
- Shoe coverings should be impermeable, too.

TIPS TO CONSIDER

- To avoid exposures, **protect yourself first.**
- If you have an open cut or wound, make sure you have a bandaid on.
- Always have gloves on hand: e.g., on field trips, at sports events or on the playground.



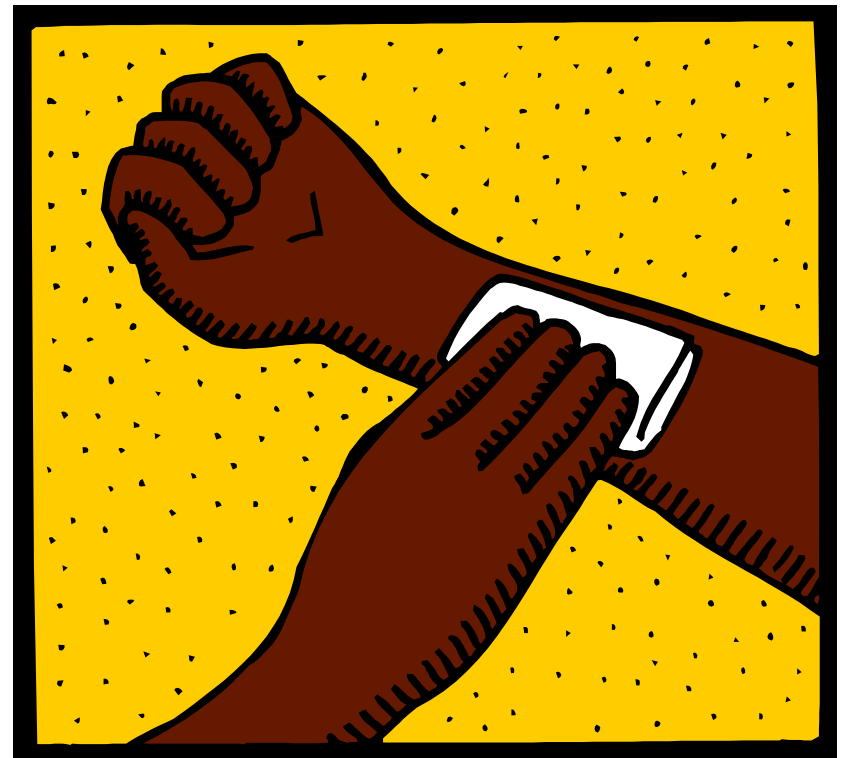
TIPS TO CONSIDER (CONT'D)



- Use your words instead of your body:
- You could supply protective covering (e.g., tissue, gauze) to the injured student or employee but, tell him/her to treat his/her own wound, if at all possible.
- Remember, any barrier is better than none.

TIPS TO CONSIDER (CONT'D)

- The student or employee, if possible, should hold pressure on a wound and wash wound himself.
- Have the individual pinch her own nose if she has a nose bleed
- Remind the individual to wash his or her hands



CLEANING / DISINFECTING PROCEDURES

- Use utility gloves as latex ones may degrade from disinfectants; they can be reused if not torn or ripped.
- Apply kitty litter or other absorbent to the area.
- Wash the area with detergent.



DISINFECTION (CONT'D)

- Apply the disinfectant:
- One part bleach to ten parts water is a good disinfectant if used appropriately:
 - Solution begins to lose effectiveness after 24 hours
 - Therefore, make it up either daily or on an as needed basis
 - Let the area air dry
- If using a commercial disinfectant, it should be an EPA approved tuberculocidal; use according to manufacturer's directions

DISINFECTION OF MOP / PAIL



- Mop used needs to be cleaned / disinfected as well:
- Can soak the mop in a bleach solution
- Don't forget the pail.

PERSONAL HYGIENE

- After removing gloves:

Wash hands with soap (liquid, if possible) and running water. Do for at least 20 seconds.

- Use waterless hand cleanser if soap and running water not immediately available. Then, wash with soap and running water as soon as possible



SAFE PROCEDURES: NEEDLES AND OTHER SHARPS

- If found, SHARPS (such as needles) must not be recapped.
- They should be disposed of in rigid, puncture resistant containers with the sharp side facing down.
- Sharps containers should be available in the nurse's office.
- Notify appropriate personnel to deal with this.

DISPOSAL OF BIOHAZARDOUS WASTE

- Generally, there are two types of waste:
 - 1) gauze, bandages etc that are **saturated** with blood or other body fluids; and
 - 2) sharps
- This is regulated by OSHA and MA Dep't Public Health: 105 CMR 480.000 Storage and Disposal of Infected or Physically Dangerous Medical or Biological Waste

BIOHAZARDOUS WASTE (CONT'D)

- Dressings etc that are saturated or dripping with blood or other body fluids must be placed in red biohazard bags with the universal biohazard symbol.



BIOHAZARDOUS WASTE (CONT'D)



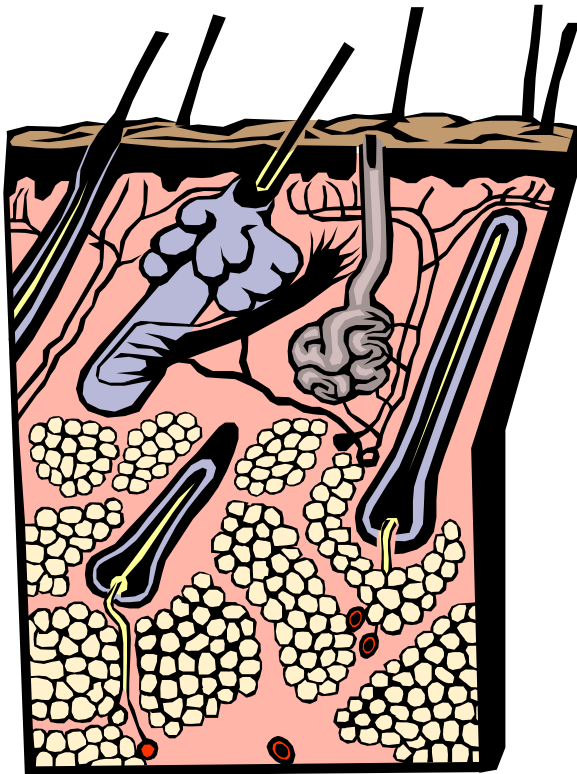
- Ultimate disposal may be accomplished by:
- contract with a licensed waste hauler;
- agreement with a hospital or other agency

LAUNDRY



- If clothing gets soiled with someone else's blood, it is ideally discarded.
- If not discarded, it should be washed separately from other clothing; wash in as hot water as possible
- Do a double rinse after

IF AN EXPOSURE OCCURS...



- If body fluids, particularly blood, get into an opening in the skin, wash the area with soap and running water
- **Applying bleach to the skin is not recommended**

IF AN EXPOSURE OCCURS...

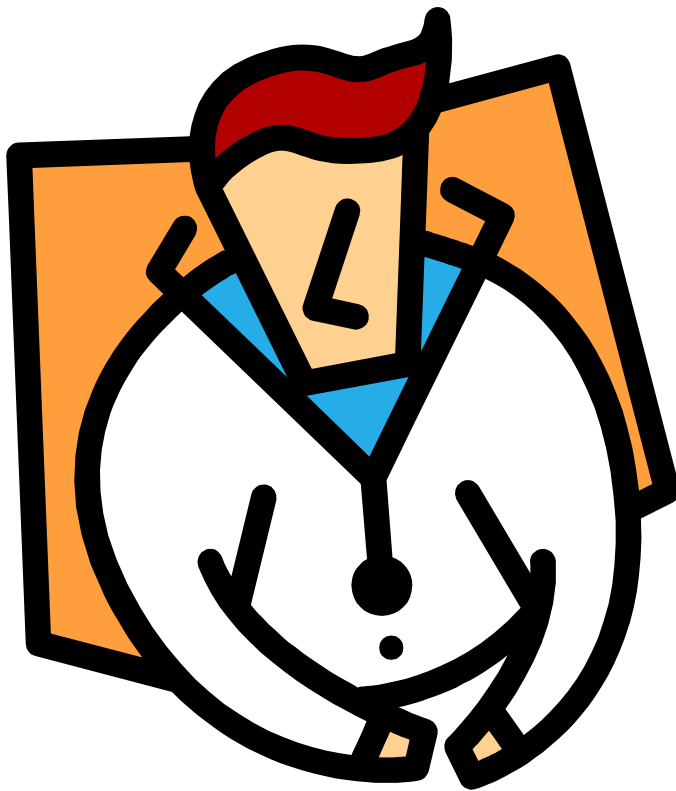
- If body fluids, particularly blood, get into the eyes, flush the eyes with water or a saline solution



STEPS TO TAKE IF EXPOSED

- Report the incident to the appropriate personnel (e.g., the nurse, principal, department head)
- Seek medical attention immediately as warranted

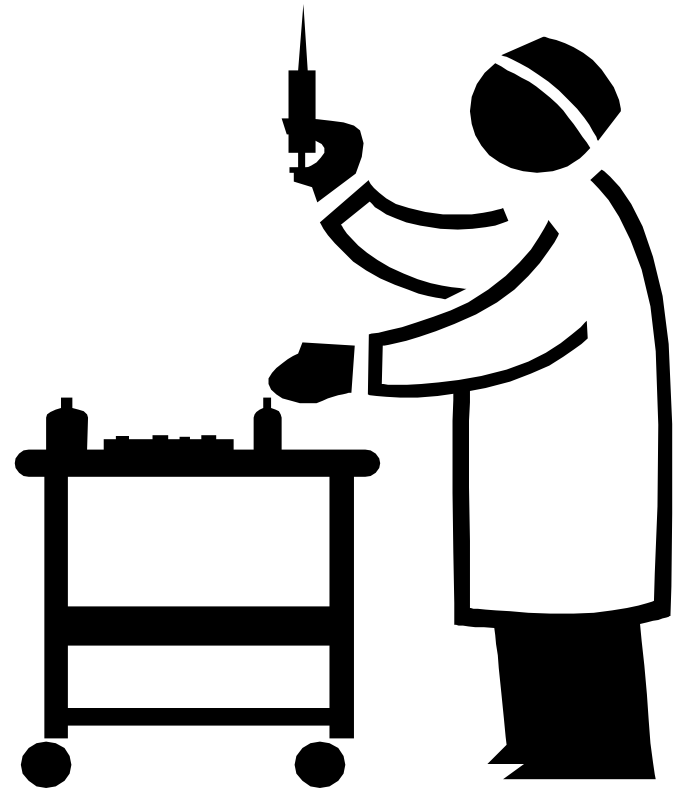
WHEN IS MEDICAL ATTENTION APPROPRIATE?



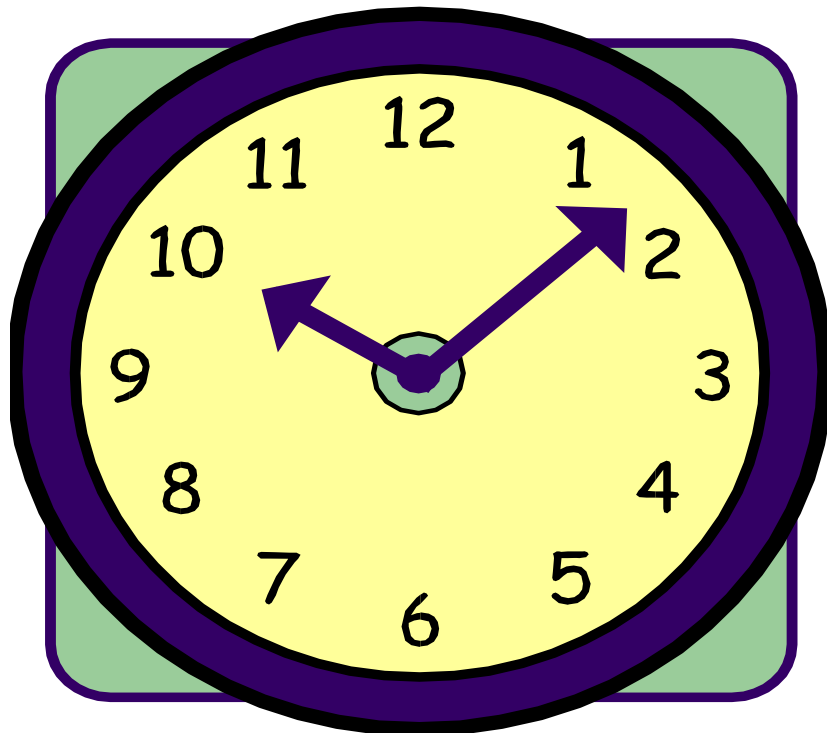
- Follow-up (medical attention) is needed if you have an unprotected exposure. Examples are:
- Blood splashing into an open cut or into the eyes
- An accidental needlestick
- A bite that breaks the skin

POST-EXPOSURE FOLLOW-UP

- Whether you need treatment is dependent on different factors, such as type of exposure.
- If necessary, medication is available that may decrease an individual's risk of becoming infected with at least some of the diseases.



TREATMENT AFTER AN EXPOSURE



- If medication is indicated, the sooner it is provided after an exposure, the more effective it will be.
- Other treatment that may be appropriate include blood testing and counseling.

PLEASE RECALL...

- Remember - even if you have been exposed, the odds are that you will not become infected.



TRAINING



- Training on infectious diseases and their prevention should be offered to new employees and annually thereafter.

WRITTEN PROCEDURES/POLICIES



- Written procedures and policies should be developed that indicate how measures to prevent bloodborne diseases will be implemented.

RESOURCES (STATE)

- MA Division of Occupational Safety (DOS)
 - Tel: (617) 969-7177
 - website: www.state.ma.us/dos
- MA Department of Public Health (DPH)
 - Tel: (617) 624-6000
 - web site: www.state.ma.us/dph

RESOURCES (FEDERAL)

- Centers for Disease Control & Prevention (CDC)
 - tel: 1-800-311-3435 or 1-888-232-3228
 - web site: www.cdc.gov
- National Institute for Occupational Safety and Health (NIOSH)
 - tel: 1-800-356-4674
 - web site: www.cdc.gov/niosh

RESOURCES - FEDERAL (CONT'D)

- Occupational Safety and Health Administration (OSHA)
 - tel: 617-565-9860
 - web site: www.osha.gov