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SCHOOL OF DENTISTRY

# Bloodborne Pathogens Training

# Why do you need this training?

- The Occupational Health and Safety Administration (OSHA) requires all employees receive bloodborne pathogens training prior to working in the dental school clinics and annually thereafter
  - MOSH (Maryland Occupational Safety and Health) sets and enforces standards designed to prevent accidents and occupational diseases in every occupation and place of employment in Maryland

# Topics

- **Section 1:** What is a bloodborne pathogen, who is at risk and how can I be exposed?
- **Section 2:** Epidemiology and symptoms of blood borne pathogens
- **Section 3** Exposure prevention strategies
- **Section 4:** What to do if an exposure occurs

# Section 1

What is a bloodborne pathogen?
Who is at risk?
How can I be exposed?

# Bloodborne Pathogen (BBP)

- Pathenogenic Microorganisms that are present in human blood and can cause disease in humans

- Sources of BBP infection that may be encountered in the Dental School
  - Blood, and blood components
  - Saliva
  - Biopsy specimens
  - Pleural fluids (secondary to coughing)

# Major Bloodborne Viral Pathogens (BBP's)

- HBV- Hepatitis B
- HBC- Hepatitis C
- HIV- Human immunodeficiency virus

# Persons at Risk for Exposure

- All Dental Clinical Personnel
  - Nurses, Physicians and Dentists
  - Dental Assistants
  - Dental Patient Care Coordinators
  - Dental Equipment Technical Services Personnel
  - Dental Laboratory Personnel
  - Information Technologists who are called to work in the clinical area
  - Housekeeping personnel
  - Building maintenance personnel working in clinical areas

# How can I be exposed?

- Direct contact with blood or body fluids
- Contact of mucosa of the eyes, nose, or mouth with droplets or spatter
- Inhalation of airborne microorganisms
- Indirect contact with a contaminated instrument or surface
  - Cold and flu can survive up to 72 hours on surfaces
  - Viruses which cause diarrhea can survive for 2-4 weeks on surfaces



# Inanimate Objects Carry and Transmit Disease

- Reusable Protective Clothing, Blankets, etc.
  - Handle as little as possible with a minimum of agitation
  - Place in laundry bags located in the prep dispense
    - Check pockets of lab coats for items *before* placing in laundry bags

Examples of items in UMB Dental School clinical lab coats that had been placed in the laundry

# Modes of Transmission

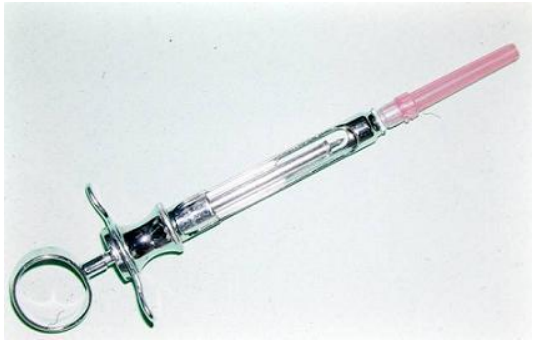
Percutaneous (through the skin)

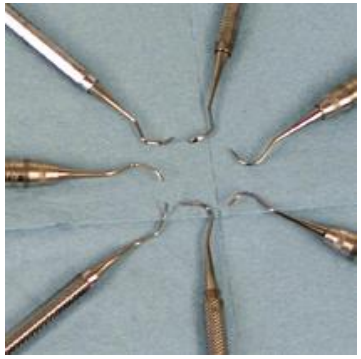
- Being stuck with needles or other sharps
- Having infected blood or other body fluids such as saliva during a dental procedure splashed onto skin that has opens sores, cuts or scratches

# Needle sticks  Are The Most Common Cause of BBP Exposure in All Health Care Settings

**Percentage of UMB <u>Dental School</u> Percutaneous injuries** caused by needles **and** other sharp instruments 2008-2009

| 2008 | | 2009 | | 2010 | |
|---|---|---|---|---|---|
| **Needle sticks** | **Other sharps** | **Needle sticks** | **Other sharps** | **Needle sticks** | **Other sharps** |
| 34% | 63% | 46% | 46% | 42% | 47% |





# Modes of Transmission

Mucocutaneous (through a mucous membrane)

- Having Infected blood or other body fluids splashed into eyes, nose or mouth

# Mucocutaneous Exposures Occur Much Less Frequently

**Percentage of UMB <u>Dental School</u>**
**Mucocutaneous injuries** caused by fluids being splashed into the eye or face

| 2008 | 2009 | 2010 |
|---|---|---|
| 3% | 9% | 11% |

# Section 2

# Epidemiology & Symptoms of Bloodborne Pathogens

# Hepatitis B Virus (HBV)

# HBV

- Hepatitis B is a disease of the liver
- HBV is usually diagnosed by laboratory testing and clinical symptoms
- Hepatitis B is preventable by immunization
- Treatment is supportive

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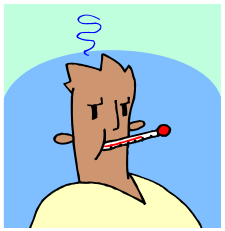
- Some people infected with HBV get very sick and become jaundiced, some become hospitalized, some die

- Some people get a mild flu-like illness



- Many cases of HBV go unreported
  - the individual infected has no symptoms in 50% of cases

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# HBV: Signs and Symptoms

- Onset is usually hard to determine
- Loss of appetite, nausea, vomiting
- Fatigue
- Abdominal pain
- Jaundice
- Skin rashes
- Arthritis

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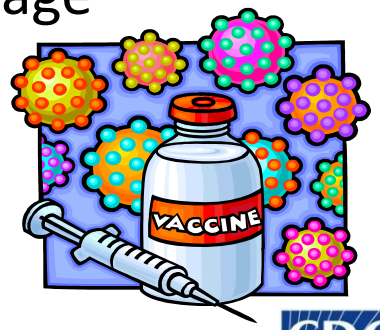
# HBV Transmission/Prevention

- Spread mostly though contact with blood, semen, vaginal fluids, saliva from a bite
- Survives outside the body on surfaces for 7 days or longer
- Vaccine is available
  - 90% of health adults less than or equal to age 40 develop immunity after receiving the vaccine series

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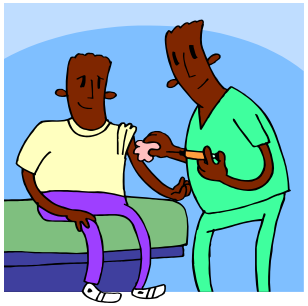
# HBV Transmission

- Chance of infection after being stuck with a needle from an HBV infected patient if you are unvaccinated: 1% to 62%
  - Risk:
    - Depends on how infectious the source individual may be
    - Higher than for Hepatitis C (HCV) or human immunodeficiency virus (HIV)

# HBV Virus Vaccine



- Derived from R-DNA protein
- Offered to students at their own cost and free to employees
  - You must sign a declination form if you refuse to be vaccinated
- Employees bring their Department IDT form to:
  - UMB Student and Employee Health (UM Immediate Care); 408 West Lombard Street (410-328-1362)

# Student and Employee Shot Times

- Mondays 3:00-4:00pm
- Tuesdays 12:00-1:30pm
- Wednesdays 12:00-1:30pm
  - No shots on first Wednesday the month
- Thursdays 3:00-4:00pm
  - No TB skin tests
- Fridays 9:00-11:00am
  - September 1st – May 31st TB test only

# Hepatitis C Virus (HCV)

# HCV

- Symptoms similar to HBV
- Spread mostly by sharing of contaminated needles
- 3.2 million people in the United States infected
- Cause of 17,000 deaths each year
- More likely to result in chronic or long-term disease, liver failure, or death than other forms of Hepatitis

# HCV Transmission

- Chance of infection after being stuck with an HCV contaminated needle is 1:50
  - Lower risk than HBV
- Average incubation period (often without initial symptoms):
  - six to seven weeks after exposure (range is two to twenty weeks)
- No vaccine available

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# HCV Transmission

- Can survive outside the body and still transmit infection for at least 16 hours, but not longer than 4 days
- Risk for HCV increases the with the depth of percutaneous injury and amount of infected blood present
- Three reports of HCV transmission from blood splash to the eye

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# Human Immunodeficiency Virus

(HIV)

# HIV Infection (AIDS): Identification

- AIDS is caused by the Human Immunodeficiency Virus
- HIV is a Retrovirus
- Incubation period: Variable
- Time from infection to detectable antibodies generally is 1-6 months

- About ½ of infected persons have developed AIDS 10 years after infection (in the absence of treatment)
- Treatment lengthens incubation period

# HIV Infection (AIDS): Progression

- Weeks to months after infection, many people develop an acute, self limited mono-like illness lasting 1-2 weeks
- May be symptom free for months to years
- Time from HIV infection to diagnosis of AIDS ranges from  2 months to 10 years or longer
- Other clinical manifestations such as infections and cancers develop later

# HIV in the USAS- July 2010

- There are more than 1 million people in the United States today that are HIV positive
  - **One in five (21%) is unaware of their infection**
- ≈ 56,300 Americans become infected yearly
- More than 18,000 people die each year
- About one quarter of HIV-infected persons in the U.S. are also infected with Hepatitis C*

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HRSA

*

# Important Information About HIV

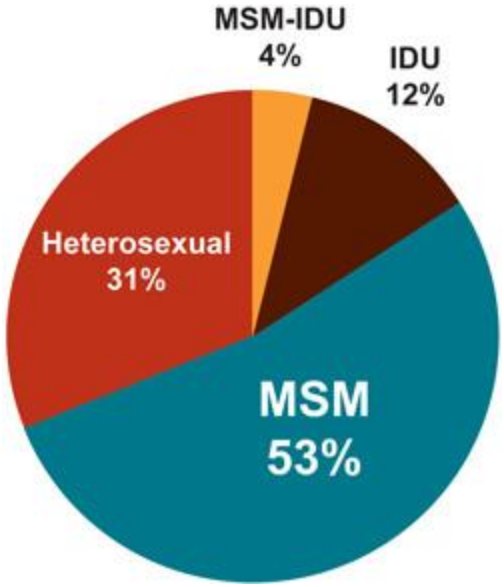
- Chance of infection after being stuck with an HIV contaminated needle is less than 1%
- Does not survive long outside of the body after exposure to air
- No vaccine available
- Like HCV the risk of HIV infection after exposure increases with the depth of skin penetration, and amount of blood present on injury causing needle or sharp

# Routes of Transmission 1981-2006

- 58 Health Care Associated HIV infections (persons without non-occupational risks)
  - 48 percutaneous (puncture or cut injury)
  - 5 mucocutaneous (mucous membrane or skin)
  - 2 both percutaneous and mucocutaneous
  - 2 unknown route
- As of 2000, no new cases have been reported, although several cases are under investigation

# Groups at Risk–July 2010

- MSM account for 53% of all new HIV infections
- 31% are infected through heterosexual contact
  - 28% of those living with HIV are heterosexual
- 27% of new cases are women
  - 25% of persons living with HIV
- Injection drug users represent 12% of new cases
  - 19% of those living with HIV



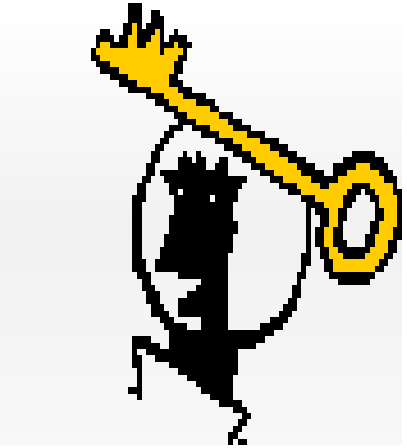
# Section 3

# Exposure Prevention Strategies

# Strategies and Tools for Success

- Regular assessment of Infection Control Program Compliance
  - Compliance surveys
- Internal review of injuries including blood-borne pathogen exposure

# Exposure Prevention Strategies are the key for the safety of all



- **Use of Standard Precautions**
- **Engineering Controls**
  - Eliminate or isolate hazards
- **Work Practice Controls**
  - Practice of safe behaviors and use of personal protective equipment (PPE)
- **Administrative controls**
  - Clear policies and procedures that reduce risks

# Standard Precautions and Universal Precautions

- Two strategies for infection control
  - **Universal Precautions**
    - All human blood and **certain** human body fluids are treated as if known to be infectious for HIV, HBV, and other **bloodborne** pathogens
  - **Standard precautions** apply to organisms spread by contact with:
    - **Blood**
    - **All** body fluids, secretions, and excretions except sweat, **regardless of whether they contain blood**
    - **Non-intact skin**
    - **Mucous membranes**

UMB Dental School uses standard precautions for all patients

# The Chain of Infection

Pathogen

Source

Mode

Entry

Susceptible Host

**Can be “broken” using Standard Precautions**

# Hand Hygiene

- Handwashing before and after contact with each patient is the single most important hygiene measure for reducing or preventing the spread of infection preventing the spread of infection.


- Hands are the most common **mode** of pathogen transmission

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# Hand Hygiene **Definitions**

- **Handwashing**
  - Washing hands with plain soap and water
- **Antiseptic handwash**
  - Washing hands with water and soap or other detergents containing an antiseptic agent
- **Alcohol-based handrub**
  - Rubbing hands with an alcohol-containing preparation (used after hand washing)
- **Surgical antisepsis**
  - Handwashing with antiseptic soap and/or use alcohol-based handrub before operations by surgical personnel

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# Hands Need to be Washed When

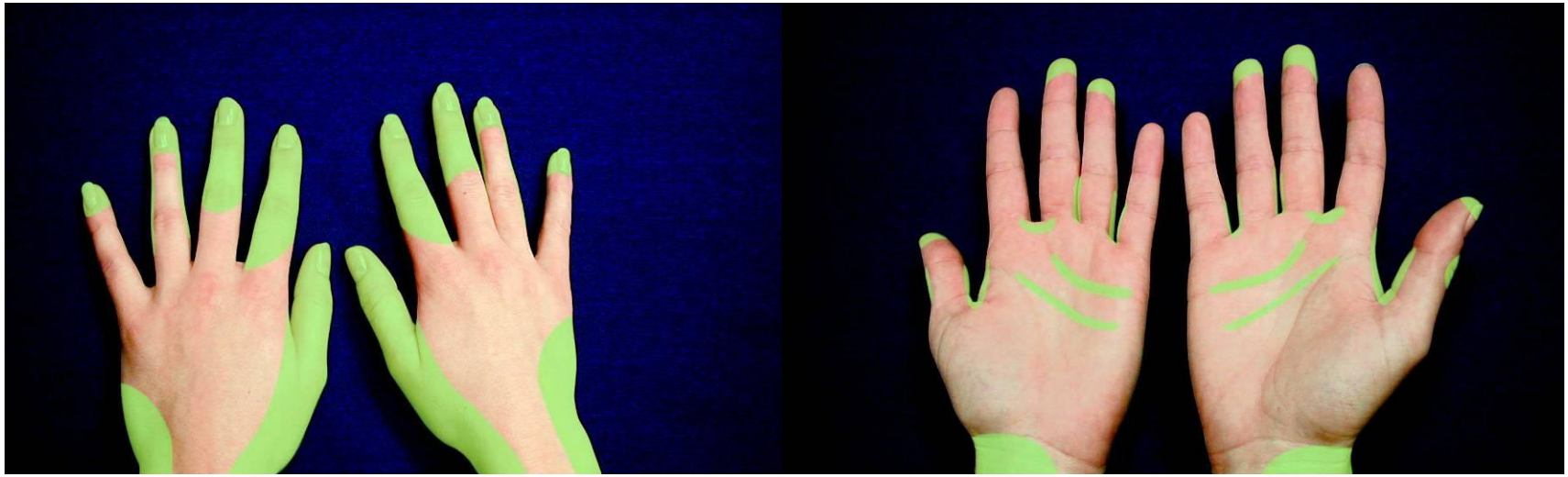
- Visibly dirty
- After touching contaminated objects with bare hands
- Before and after patient treatment
  - before glove placement and after glove removal

Alcohol based hand sanitizers can be used instead of hand washing **only** when a sink is not readily available **and/or when** hands are not visible soiled.

# OSHA Guidelines for Hand Washing

- Are the same as the CDC recommendations, **except** OSHA mandates that:
  - When antiseptic cleaners are used employees are **required** to wash their hands in running water as soon as practical

# Hand Hygiene:
# Frequently Missed Areas



Courtesy of SDS Kerr

# Rings and Jewelry

- Do not wear large dangling earrings unless they can be tucked safely inside a cap
- Avoid hand, and wrist jewelry that may tear gloves, & harbor bacteria

- Studies have demonstrated that skin underneath rings is more heavily colonized than comparable areas of skin on fingers without rings
  - The more rings worn, the greater concentration of organisms

# Fingernails

- Can affect the integrity of gloves
- Can harbor bacteria
- Keep fingernails SHORT!
  - *Avoid artificial nails*
  - *Avoid chipped nail polish*

# Main Cause Of Exposures

- Distraction
  - Cause of >60% of exposures

**Distraction can be very dangerous, outside and inside the mouth!**

# Distraction

## -Solution:

- Concentrate on task at hand
  - Avoid talking to others in the area while working
- Taking eyes from the patient, while operating the handpiece in the mouth, has resulted in patient and student injury

# Being in a hurry

- **Solution:**
  - Time Management
    - Ask for assistance if you need it

# Hand fatigue

- **Solution:**
  - Periodic breaks
  - Hand massage and flexing

# Patient Positioning

- **Solution:**
  - Reposition periodically as needed to prevent back fatigue, and for optimal visualization of work area

# INFECTION CONTROL COMPLIANCE

Non Compliance with one of the **8 Dental School Infection Control Standards,** can result in the spread of blood-borne pathogens, and other infections

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# UMB Dental School I.C. Standards; 1-4

1. Improper needle or sharps handling
2. Improper or incomplete use of Personal Protective equipment (PPE), and/or failure to provide eye protection for a patient when there is potential for splash, spatter or flying debris
3. Use of contaminated equipment or instruments for direct care
4. Touching clean or non contaminated items or surfaces with contaminated gloves

# UMB Dental School I.C. Standards; 5-8

5. Food and beverages, or personal grooming in patient care areas
6. Inappropriate or incomplete disposal of hazardous or infectious waste
7. Failure to use appropriate barriers and /or adequately disinfect treatment areas between patients; failure to flush and clean /maintain dental equipment and dental unit tubing and filters
8. Failure to report an exposure or comply with medical follow-up

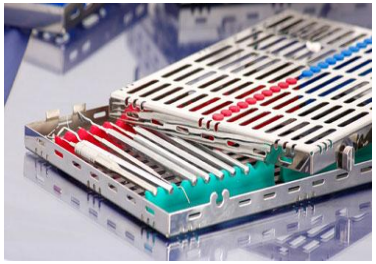
# #1: Improper Needle or Sharps Handling

- Needle sticks are the most common way that infectious diseases are transmitted in all health care settings

# #1: Improper Needle or Sharps Handling

- ***Solution:***
  - Never hold cap while recapping; use recapping device or scoop technique
    - **Use PRACTIshield needle cap holder as directed, recapping as soon as possible**
  - Never leave syringe uncapped
    - Insure needle cap is secure
  - **DO NOT use fingers to retract**
  - Insure contaminated instruments do not protrude from cassettes
  - Use blade removal devices


http://practicon.com/product.aspx?id=39521



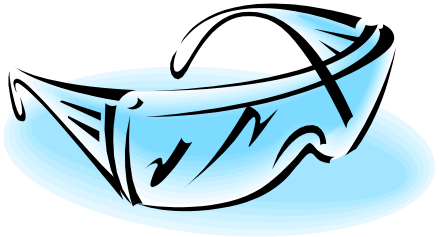
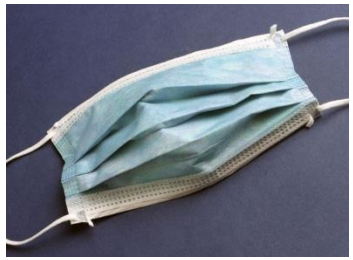
# How To Use The PRACTIshield

- To uncap and recap syringe needle between injections:
  - Place capped (sheathed) needle firmly in center of PRACTIshield
  - Hold cap underneath PRACTIshield, pull syringe assembly upward to uncap
  - Set PRACTIshield on instrument tray, using it as a needle cap prop
  - Re-cap using one hand, inserting needle back into the cap within the PRACTIshield prop
  - Tip syringe upward putting pressure on cap to insure it is secure


- Do not place the PRACTIshield in the sharps container

# #2: Improper or Incomplete PPE

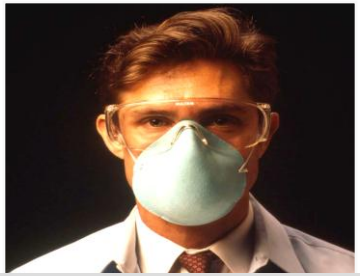
- Improper or incomplete use of personal protective equipment (PPE); gloves, mask, eye protection with side shields, on students and staff
- Failure to provide eye protection for a patient when the potential for splash, spatter or flying debris exists

# #2: Improper or Incomplete PPE

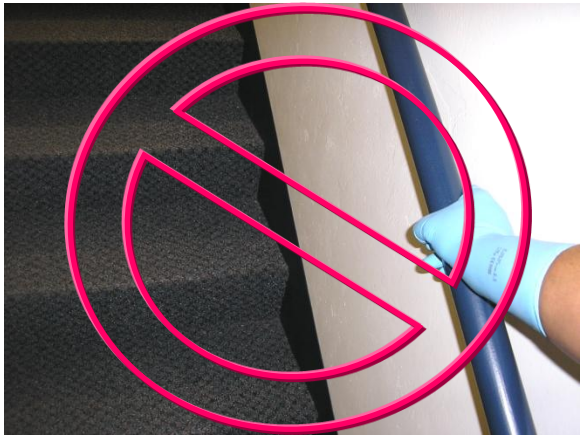
- **Solution:**
  - Scrub attire replace street clothing
  - Lab coat must be worn over scrubs in clinical areas
  - Close toed shoes are worn for safety and sanitary reasons
  - Replace when visibly soiled, or at end of the day (change masks between patients)
  - Do not wash or reuse gloves
  - Do not wear clinical or surgical attire in the restroom
  - Always wear appropriate PPE:
    - during patient treatment, or when approaching within 2 feet of the patient's open mouth
    - when working in the dental lab
    - while performing any cleaning and disinfection procedure

**pull back long hair or place in cap**



**Protective Eyewear must have side shields**

# NEVER WEAR PPE OUT OF THE CLINICAL AREA!



**OSHA inspectors do not if know gloves and coats are clean and assumes they are contaminated**

**NO LAB COATS where food is bought or eaten!!!**

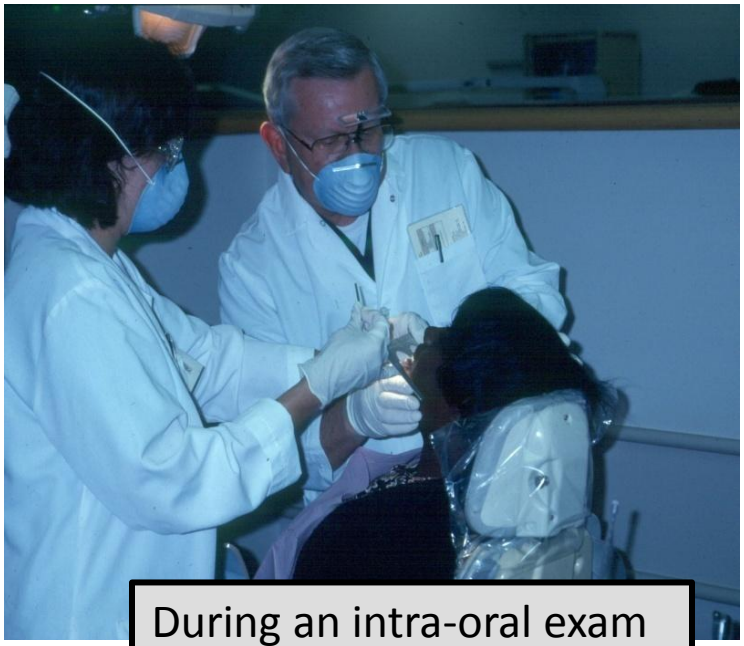
# Appropriate Use of PPE

## -eye protection with side shields, mask, coat, and gloves

Protecting a patient from potential flying debris

While providing treatment

During an intra-oral x-ray



During an intra-oral exam

# Contamination Of The Eye With Bodily Fluids or Eye Trauma

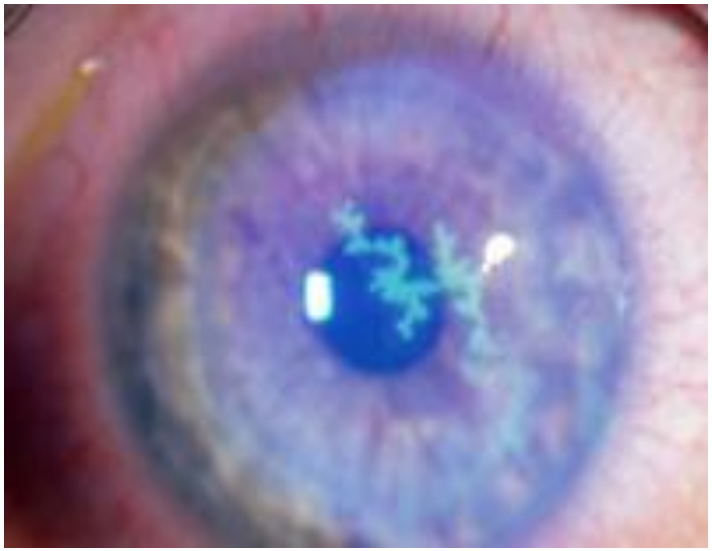
- Possible *without* the use of proper eye protection
- **Can be serious, and have long term effects!**

**Ocular Herpes**

CDC Department of Health and Human Services Centers for Disease Control and Prevention

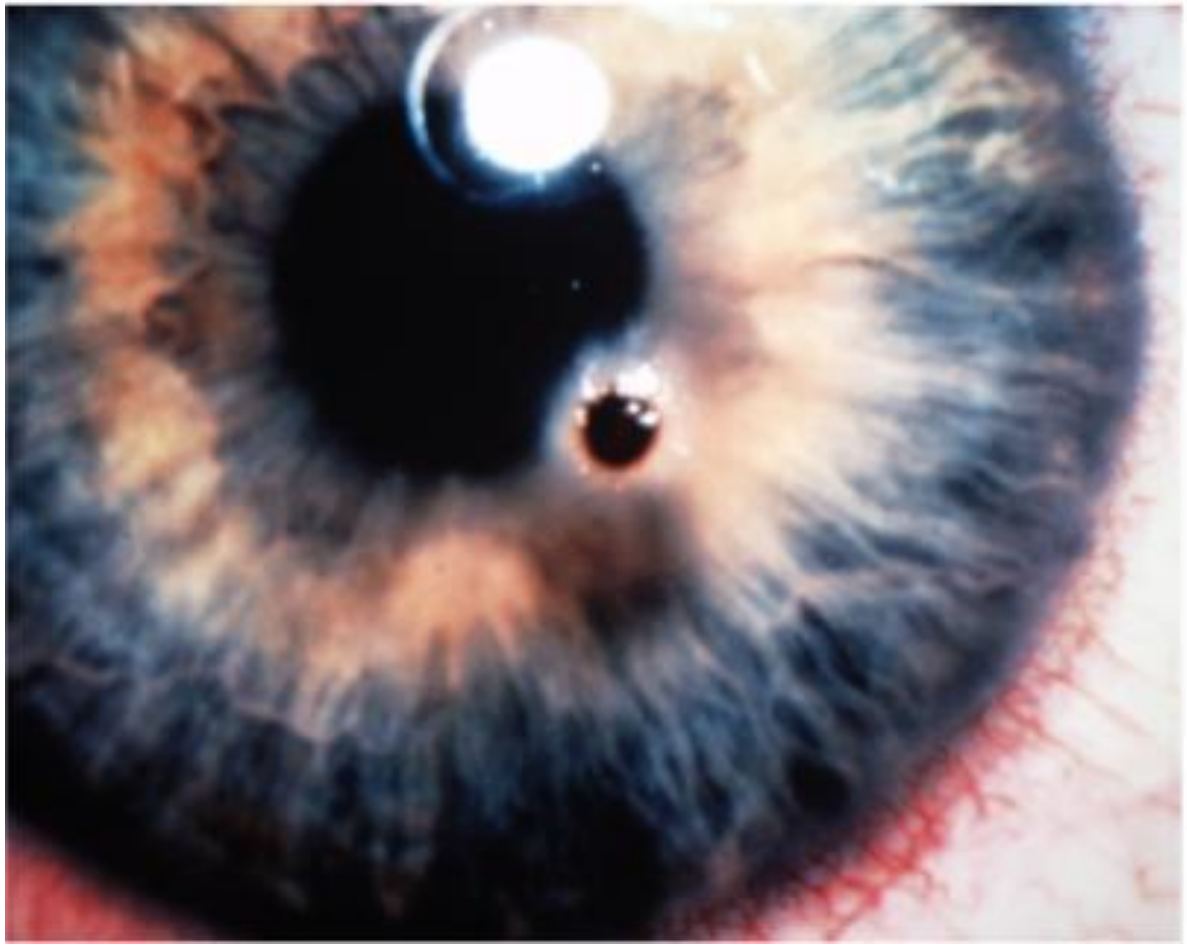
RECURRENT HERPES SIMPLEX KERATITIS

www.uveitis.org



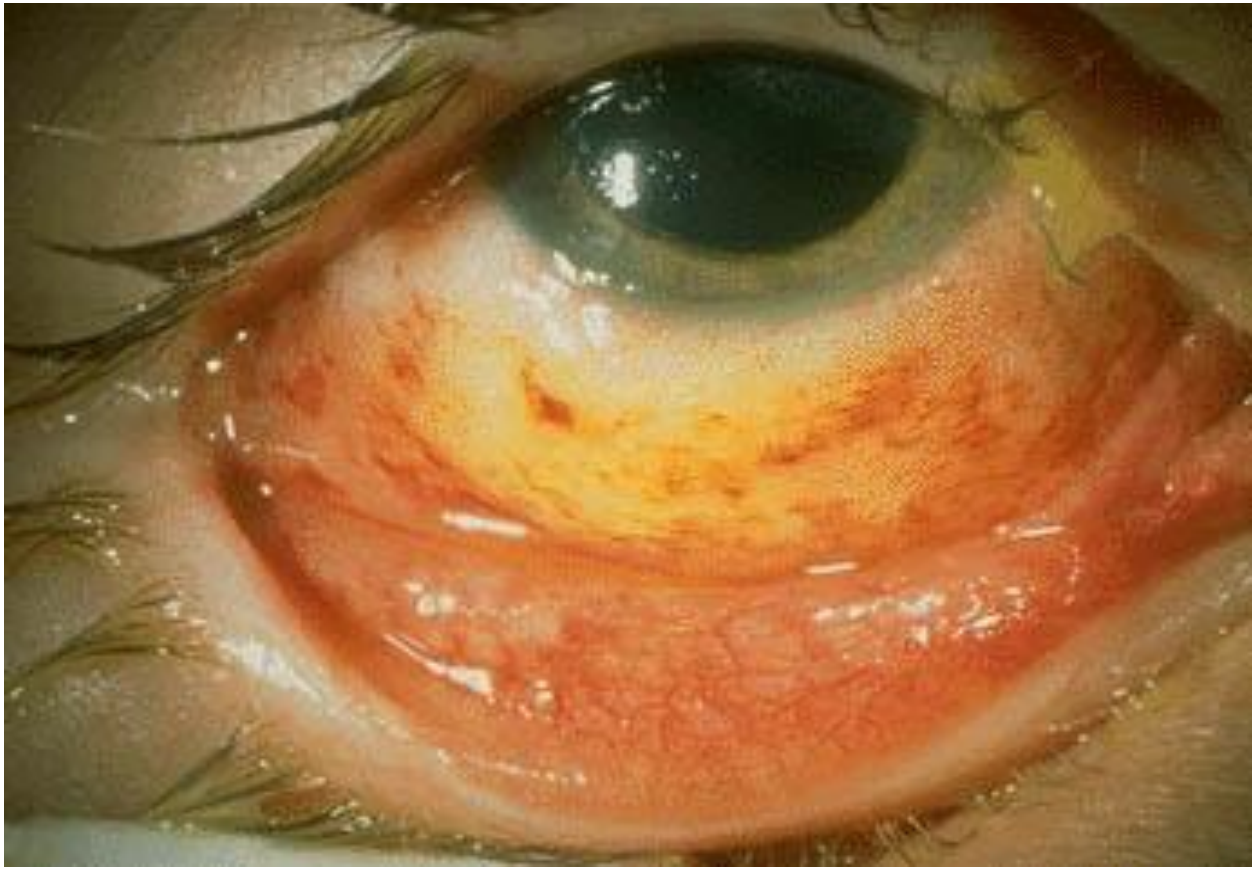
www.cornealdocs.com/html/other-services.html

www.cornealdocs.com/images/img-HSV-dendrite.jpg



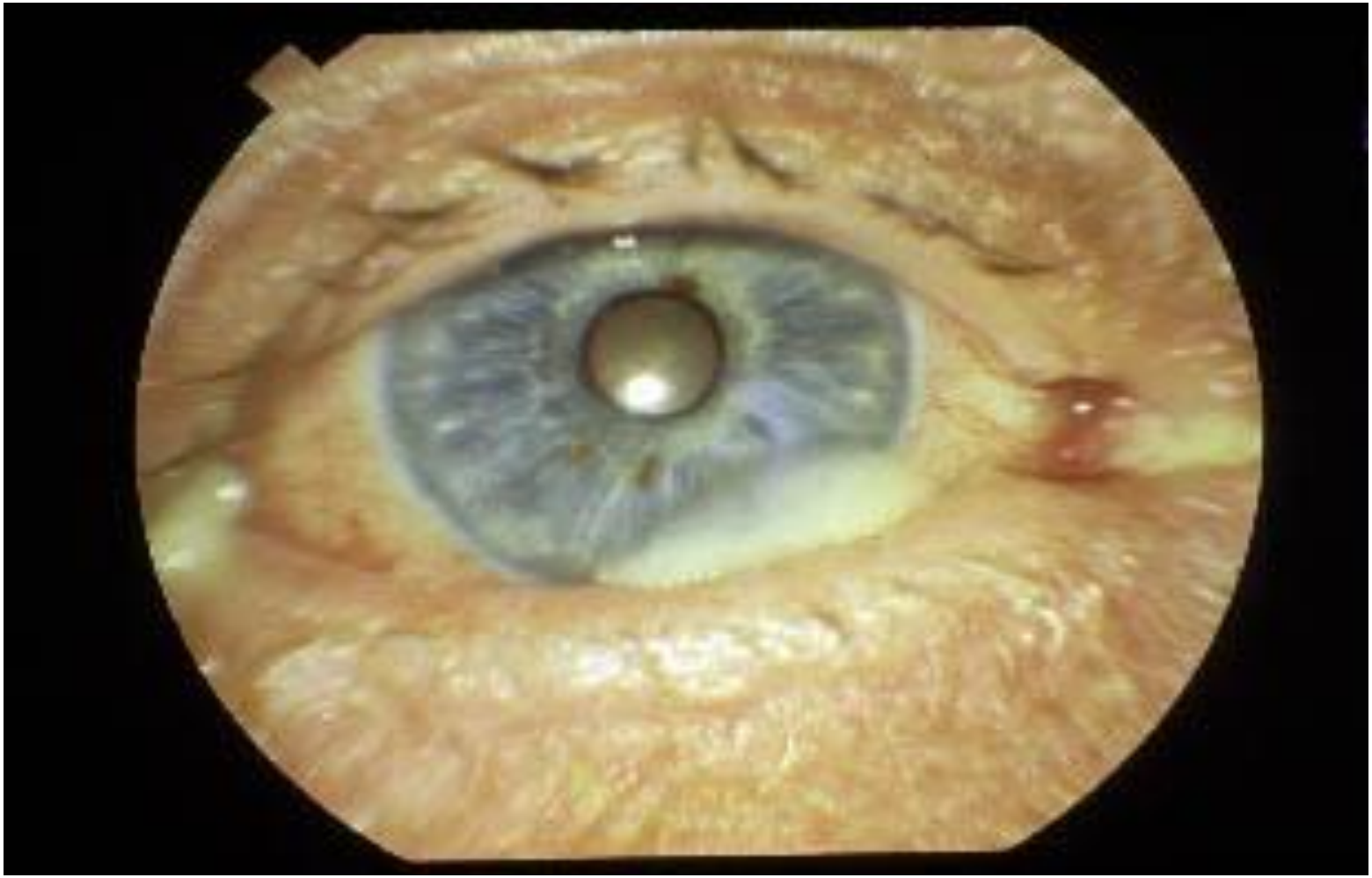
# Foreign Body Penetration

http://www.sealine.co.za/view_topic.php?id=399&forum_id=28



Chemical Burn

http://www.eyemac.com/healthlinks/disease/



# Bacterial Conjunctivitis

**laico.org/.../bacterial_conjunctivitis.gif**

# #3: Contaminated Item Use

- Using equipment, tools or instruments for direct patient care that have become contaminated
  - For example:
    - A dropped instrument
    - An instrument that is the source of a student/staff blood borne pathogen exposure
    - An instrument from a torn or damaged sterile package
  - **Solution:**
    - Never use a contaminated item
    - To prevent a double exposure:
      - Immediately identify and remove any instrument/needle that was the source of an exposure so it is not reused

# #3: Contaminated Item Use

–**Solution Continued:** Sterile Irrigating Solutions

- Dental unit water tubing cannot be reliably sterilized
  - Use sterile saline or sterile water as a coolant/irrigator when performing surgical procedures
  - Use devices designed for the delivery of sterile irrigating fluids

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# #4: Contamination of Clean Areas

- Touching “clean” or non contaminated items or surfaces with contaminated gloves
  - Doorknobs, charts, etc.

  - **Solution:**
  - Think: a gloved hand is a dirty hand
    - Organization prior to patient procedures reduces the probability that additional supplies will have to be obtained from the cluster cabinets

# **Standard #4- Solution:** Part 2

- <u>If it becomes necessary to obtain additional supplies once gloves are contaminated:</u>
  - Remove contaminated gloves 
  - Wash hands, or use alcohol based hand sanitizer
  - Remove necessary items from the cabinet
  - Re-glove to complete patient procedure

# #5: Food, Beverages, and Grooming in Patient Care Areas

- Staff and student eating, drinking, storage of food and performing personal hygiene in the clinical area
  - **Strictly prohibited due to the strong possibility of cross contamination**
    - **Solution:**
      - Eat, eat, drink, and practice personal hygiene in the appropriate areas (dining area or bathroom)




# #6: Improper Disposal of Waste

- Inappropriate, or incomplete disposal of hazardous or infectious waste such as amalgam scraps, and contaminated expendable items


Recycle!

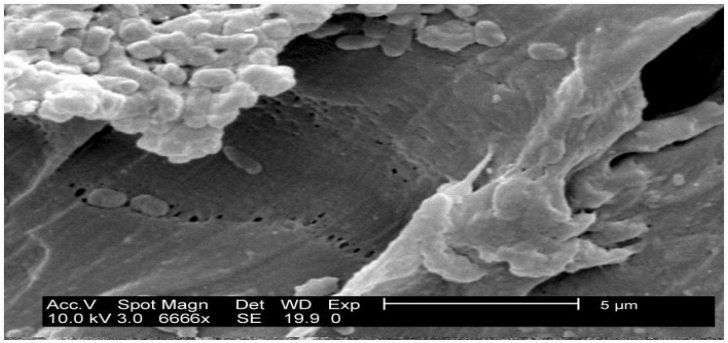
- **Solution:**
  - Recycle amalgam
  - Dispose of items contaminated with body fluids in Bio-hazard trash receptacles
  - **Use sharps containers**


# #7: Failure To Protect Equipment with Barriers, and Maintain Dental Unit

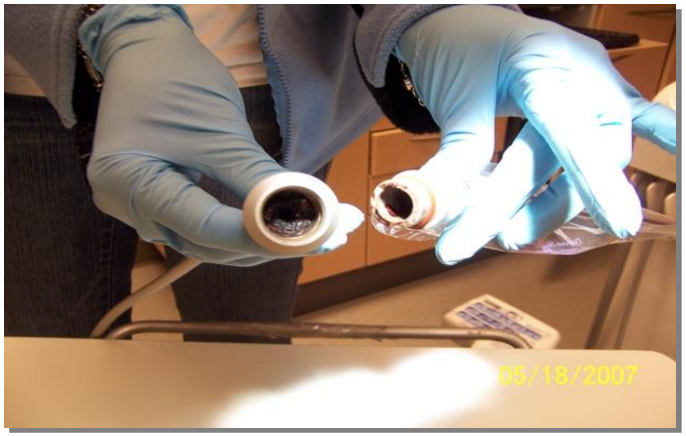
- Failure to use appropriate barriers and/or adequately disinfect treatment areas between patients; failure to flush and clean/maintain dental unit tubing, and filters

**Two examples of proper barrier use**

**NOTE: only EPA registered barriers are used**




**Biofilms that harbor and spread disease form in waterlines not flushed daily**




**Blood, tissue and other debris will deposit inside dental unit suction tubing not cleaned and disinfected daily**

# #7: Failure To Protect Equipment with Barriers, and Maintain Dental Unit (continued):

- **Radiography Barriers:**
  - **Apply barrier to any surface which may become directly contaminated:**
    - Digital Radiography X-Ray Head
    - Digital Sensor
  - **Apply barrier to any surfaces which may become cross contaminated, for example:**
    - Computer mouse and keyboard
    - Exposure emission switch on outside of x-ray room door

# Infection Control Standard #7 – Solution Part 1:

- After disposal of barriers:
  - Remove gloves (not other PPE), wash/or sanitize hands, and apply fresh gloves
  - Wipe down all areas that were not barrier protected, and/or areas that became contaminated, twice
    - **Allow adequate time for decontamination (10 min)**


**Cleaning and decontamination: 2 step process!**

# Infection Control Standard #7 – Solution Part 2


**Intermediate level disinfectant**

- Use vinyl (NOT LATEX) gloves for cleaning and disinfection
- Use only approved cleaners such as Birex that are EPA registered , and effective against HIV and HBV
- Always use fresh solution; Birex expires 14 days after being mixed (label spray bottles with expiration date)
- *Use premoistened wipes on radiology equipment*

**Spray Birex on paper towels or gauze, not directly on clinical surfaces/equipment**

# Infection Control Standard #7- Solution: Part 3

- Run handpieces and devices attached to waterlines for 20 to 30 sec prior to cleaning and disinfection
- Perform regular dental unit tubing cleaning and maintenance per Planmeca/UMB protocols every morning, evening, and between patients


- **Use only a cleaning solution made with Vacusol Ultra Dental Vacuum Line Cleaner**
- **<u>Do not</u> use bleach & <u>do not</u> use Dishwashing liquid**

**Remember to always wear PPE when cleaning and performing dental unit maintenance**

# UMB Dental School Waterline and Suction Tubing Maintenance/Infection Control for Planmeca Unit

## Instrument Waterlines

- **In the morning prior to care:**
  - **Long Flush:** remove hoses; bend guide arms back at least 90° (press spray key for 6 sec)
  - Manually flush air/water syringe
  - Cover hose and holder with barriers
- **Between patients**:
  - **Short Flush:** remove hoses; bend guide arms back at least 90° (press spray key for 3 sec)
  - Manually flush air/water syringe)
  - Clean/Cover with hose and holder with barriers
  - Return hoses to instrument holder
- **At end of day:**
  - **Long Flush:** remove hoses; bend guide arms back at least 90° (press spray key for 6 sec)
  - Manually flush air/water syringe
  - Turn unit off immediately to insure cool water in waterlines to minimize biofilm growth

## Suction Hoses

- **In the morning prior to care:**
  - Rinse suction system with 1 liter of water using the Orocup
  - Turn suction off once Orocup is empty
  - Clean/Cover hose end with barriers as applicable
- **Between patients:**
  - *Suction* approximately 100-200ml of water with both the saliva ejector & high speed suction
    - Perform even if only one used; *for hygienic and operational reasons*
- **At the end of the working day:**
  - Rinse the suction system with about 1 liter of water using the Orocup
  - Follow the water rinse with a cleaner/disinfectant rinse
    - Rinse with 1 liter of Vacusol solution, mixed with water per manufactures directions (Do Not use bleach or detergent)
    - Suction hose handpieces can be removed, cleaned & disinfected manually and/or using an ultrasonic cleaner, or autoclaved up to 135°C

# Infection Control Standard #7- Solution Part 3, continued:

- Unit Maintenance Cannot Be Neglected!

**Chair Side Unit- Interior**

Fine Filter

Amalgam Trap

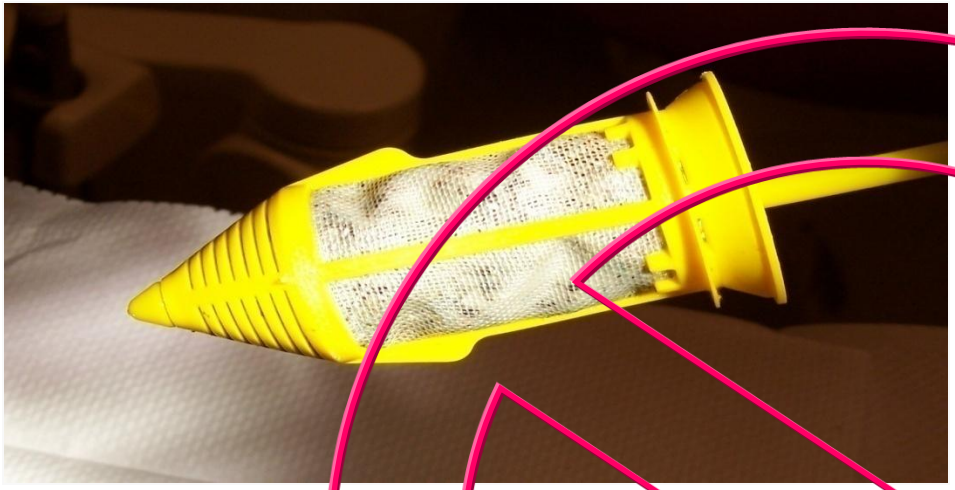
Coarse Filter **(do not touch)**

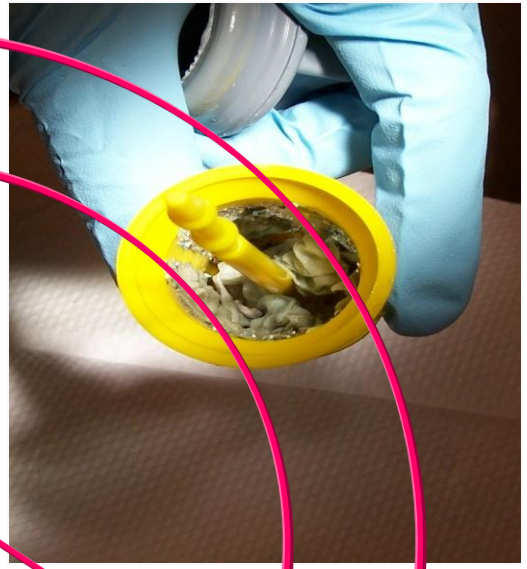
# The Fine Filter

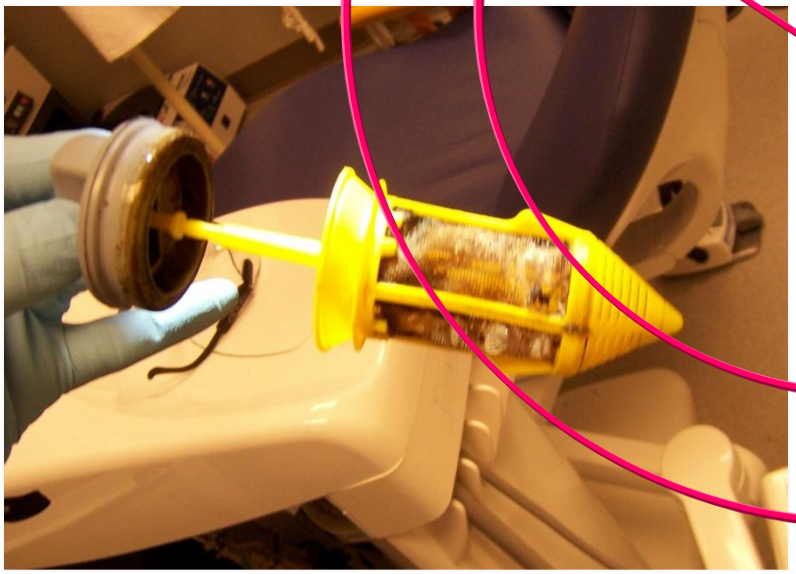
- Should be checked weekly and rinsed as needed

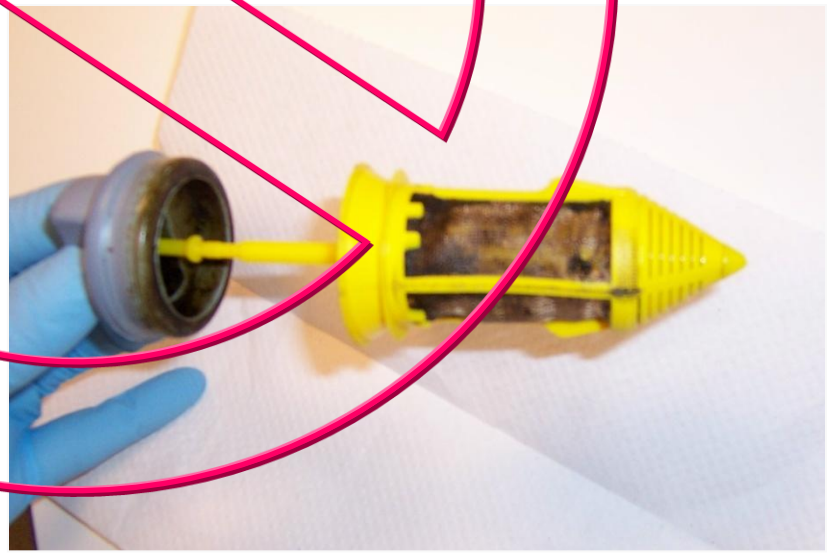
**Properly maintained fine filter**

# Fine Filters-Not Properly Maintained







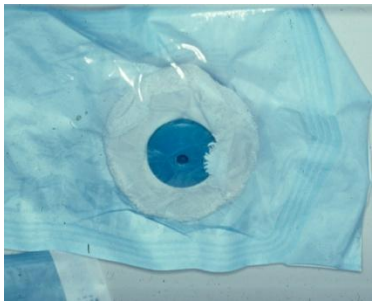


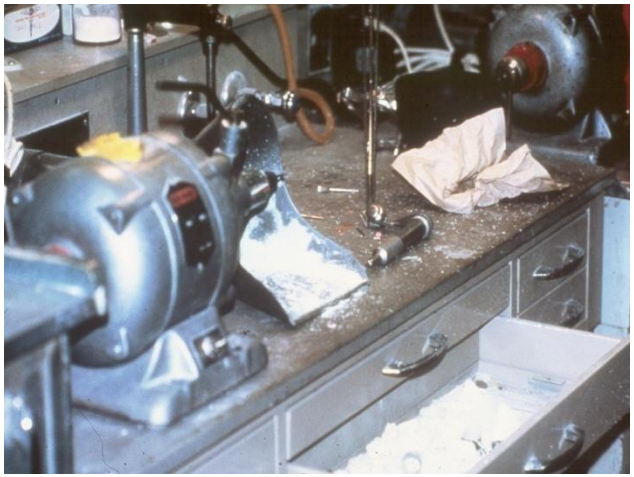
# Amalgam Trap

- **Check monthly**
  - Need to empty depends on the amount of dental work completed involving amalgam
- **To empty**
  - Engage suction (draws small amount of water off top inside trap)
  - Carefully remove container (unscrew). It will be nearly full of water
  - Carefully pour off as much water as possible
  - Pour amalgam scraps from trap bottom into recycle containers


# Remember Laboratory Housekeeping

- At least daily:
  - Clean and disinfect work surfaces
  - Change pumice
  - Disinfect or sterilize points, rag wheels etc.
  - Empty water baths, ultrasonic cleaners, etc.





**Insure all impressions, and dental prosthetic items have been cleaned and disinfected before laboratory processing**

# #8: Failure to Report an Exposure/Double Exposure, or failure to comply with required post-exposure follow-up


**-Solution:**

- Remove the item that punctured your glove, so a **double exposure** does not occur
- Report immediately to your supervisor, and page the Dental School Emergency Response Team (ERT)
  - Follow posted by clinic wall phones

# How Page the Dental School ERT

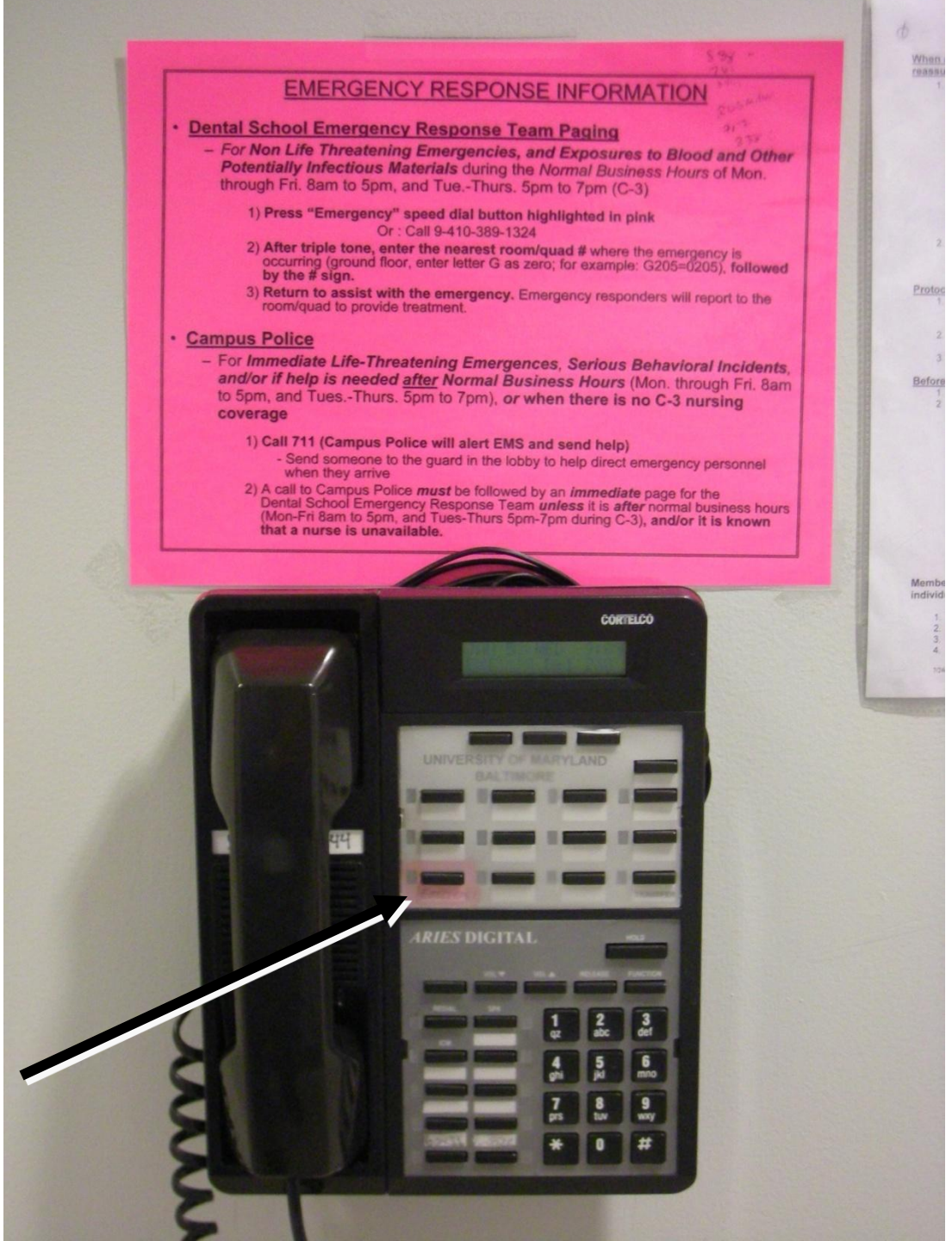
- Page **410-389-1324** and enter nearest room or quad number, followed by the # sign (CMS enter 777#)

  **-or-**

- **Press the pink highlighted button on clinic wall phones labeled "Emergency"**
  - Dental School nurse or emergency response team (ERT) member will come to:
    - Provide counseling to source patient and injured party
    - Draw source patient blood (after signed consent) for confidential Hepatitis & rapid HIV testing

# Clinic wall phone

pink highlighted emergency response speed dial button



# Section 4

# What to do if an exposure occurs

# EXPOSURE FOLLOW-UP PROCEDURES

- **Remove the instrument responsible for the exposure so it is not reused**
  - **set safely aside for inspection along with gloves, if gloves are not visibly perforated**
- Make sure the source patient is not discharged
- Rinse/Wash the affected area (do not force wound to bleed)
- **PAGE THE EMERGENCY RESPONE TEAM**

# Wound Care

- **Lacerations**
  - Wash with antimicrobial soap and water, then bandage
    - **DO NOT force superficial wounds to bleed**
    - **DO NOT use bleach or other caustic agents**


- **Splashes to nose, mouth, and intact skin**
  - Flush with cool water for 15 minutes

- **Eye exposure**
  - Eyewash stations are located in Prep Dispense and Lab areas
  - Flush with cool water for 15 minutes

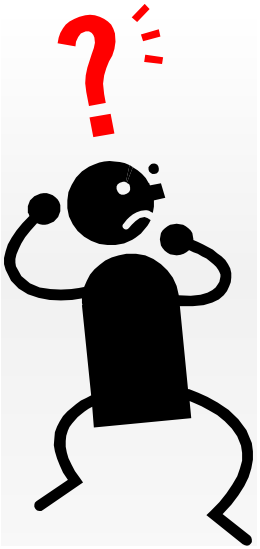
# EYE Wash Station Use

## After an Exposure to the eye:

- **Before** turning on the water
  - **Uncap** red cover on the side of the affected eye (or both sides for both eyes)
- Turn the cold water faucet knob
- Adjust  faucet until water is spaying upward at a comfortable level
- Flush eyes for 15 minutes (roll eyes around)
- Report exposure incident to the emergency response team
  - **Use pink highlighted auto dial button on clinic wall phone, or have someone page: 410-389-1324**
    - Enter your room location followed by the # sign

# Felt a stick, but no sign of injury?

- Perform a glove check (dental school nurse will assist)
  - While wearing PPE, carefully add water to the glove, seal of the end, and apply pressure
    - If the glove leaks when filled with water, you were exposed!
- Exposure risk is considered low if skin appears intact, or if wound is superficial



# Infection Risk Assessment Factors

- Amount and type of infectious fluid present
  - Blood, saliva, or both?
- Type of exposure and severity of injury

**For Splash to Mucous Membranes**

- Estimate volume of material
- Duration of contact

**For Skin Contamination**

- Estimate volume of material
- Duration of contact
- Condition of the skin (chapped, abraded or intact)

**For Puncture**

- Type of device, or needle gauge
- How and when exposure occurred
- Depth of wound
- Amount of blood on device
- If contaminated fluid was injected

# Important Patient Information

- Recent details (within 30 days) regarding the exposure source individual's blood-borne pathogen status (HBV, HCV, HIV) if known
- If current blood test results unknown-
  - Does patient have a known BBP
  - Do they engage in risky behaviors (i.e., IV drug use)

# Post-exposure Blood Testing


- Exposed person MUST submit to a blood test, or the source patient cannot be legally tested
- <u>Source patient has the right to refuse to comply with blood testing</u>

# High Risk Source Patients

- If source patient is high risk, antiretroviral medications may be indicated
  - Follow-up will be initiated immediately by the dental school nurse
    - Student or employee will be seen by a physician within ½ hour of arrival at Student and Employee Health (UMIC) on 408 West Lombard Street

# Low Risk Exposure Follow-up

- A Dental school nurse will respond to your Emergency Response Team page
  - Monday - Fridays from 7am until 5:00pm, **except** on C- 3 clinic days when a nurse is available until 7pm
- The Dental School nurse will notify Student Health (UMIC) on 408 West Lombard
  - Student or employee will report as soon as possible

# After Hours Exposure Reporting

- **If the nurse is gone for the day:**
  - PROVIDE FIRST AID, AND THEN CONTACT THE NEEDLESTICK HOTLINE
    - Follow instructions located on the cover of Student Injury Packets located in bin on each nurse's office door on 1st , 2nd and 4th floors
    - *You may phone from the 2nd or 4th floor nurses office for privacy (room 2318, or 4317)*

# Why contact the Hotline?

- **The Needlestick hotline at UMMS will help you determine the exposure risk:**
  - **High risk** exposures will be directed to go to the Emergency Room at UMMS



  - **Low Risk** exposures will be directed to go to Student and Employee Health the next business day (Report to a dental school nurse in the am.)

# Drawing blood on a source patient in an after hours exposure situation

- Blood draws cannot be done after nursing hours
- Ask the source patient when it is convent for him or her to return for a free confidential blood draw
- Nurses are generally available Monday - Fridays from 8am until 5:00pm, except on C- 3 clinic days when a nurse in available until 7pm
- Notify a nurse the next business day when/if the source patient will return for BBP testing

# “What forms do I need to complete?!!”

- Forms are located in specially labeled large packets in bins on nurses office doors
  - Oral Surgery: Room 1326 (1st floor)
  - GP: Room 2318 (2nd floor)
  - Pros: Room 4317 (4th floor)
  - Dental School Nurses can assist you to complete the necessary forms either that day or the next day if exposure occurred after hours

# Forms To Be Completed

| Students | Employees | Volunteers |
|---|---|---|
| 1) Incident Report* | 1) Incident Report*<br>2) First Report of Injury<br>3) Accident Witness Statement<br>4) Supervisors Report<br>(**Forms need to be electronically sent, hand carried, or faxed to EHS as soon as possible, so a Worker's Comp. Case Number can be assigned**) | 1) Incident Report*<br>2) JE Authorization form* |

*Copy must be taken or faxed to Student and Employee Health

- **Employees will also need Workman's Comp Authorization prior to being seen at Student and Employee Health**

# Post HBV Exposure

- Hepatitis Vaccine
  - Given to exposed persons who have not been vaccinated or acquired immunity
- Hepatitis immune globulin
  - Given only to persons **who have NOT acquired immunity** from the vaccine, if source patient is $HBsAg^+$, and/or $HBeAg^+$ (marker of increased infectability)

# Post HCV Exposure

- Immune globulin and antiviral agents (interferon with or without ribavirin) are not recommended unless a positive diagnosis has been made in the ***exposed*** individual
  - Post exposure testing should be done periodically for at least six months, if source patient was a known HCV carrier

# Post HIV Exposure

- Antiretroviral meds started soon after a moderate or high risk exposure exposure *may* prevent or inhibit infection

  - Ideally started within the first 2 hours
  - Can be started more than 24-36 hours after exposure, but may be less effective
  - Generally taken for 4 weeks unless source is found to be HIV negative
    - Exposed person is closely monitored for drug toxicity

# Congratulations!

- You have completed your bloodborne pathogens training, and can proceed to the exam
  - Close this window and open the Bloodborne Pathogens Exam/Quiz
- If you have any questions about any of the material in this presentation contact:

Janet Naglik, RN
UMB Dental School Infection Control and Exposure Management/Dental School Emergency Response Team member
Room 4317, Phone 6-6344
Individual pager# 410-389-1298