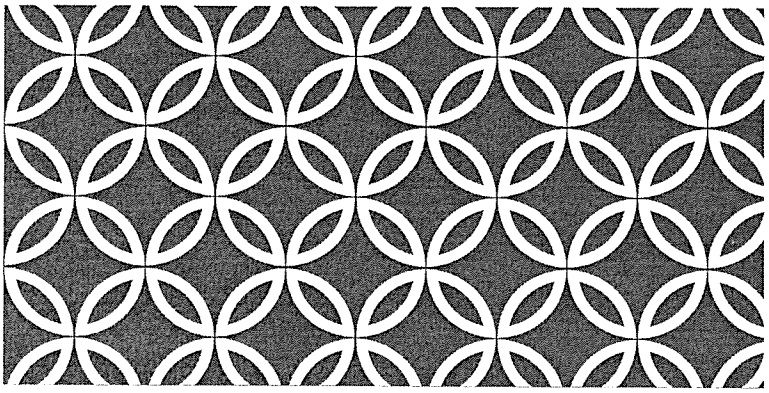

"INFECTION/EXPOSURE CONTROL IN THE ORAL HEALTHCARE SETTING"

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LEARNING OBJECTIVES:

- OSHA vs CDC
- Chain of Infection
- Standard Precaution
- Immunization
- Hand hygiene
- Personal Protective Equipment (PPE)
- Occupation Exposure
- Engineering & Work Practice Controls
- How Covid-19 Changed the Delivery of Dental Care

- Sterilization & Disinfection
- Water Unit Lines
- Dental Laboratory
- Dental Radiology
- Hazard communication standard

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

OSHA®

ADA American Dental Association®
America's leading advocate for oral health

OSAP.org
The Safest Dental Visit™

OSHA

Occupational Safety & Health Administration

US Government Agency under the Dept. of Labor

Their mission is to ensure safety in the workplace

1986 Began to develop the New Bloodborne Pathogens Standards

1991 Mandatory Bloodborne pathogens standards

CDC

Centers for Disease Control and prevention

US Public Health Agency

They review current scientific information

Then create recommendations

They tract disease trends across the country

Serve as primary investigator when disease outbreak threatens public health

Infection Prevention and Control

Refers to policies and procedures used to minimize the risk of spreading infections in health care settings.

CHAIN OF INFECTION

Is that process by which infectious diseases are transmitted.
- A causative agent
- A susceptible host
- A mode of transmission

All three components are necessary for infection to spread.
Infection control strategies are intended to break one or more of the links, thereby preventing disease transmission

CAUSATIVE AGENT

Any microorganism in sufficient numbers capable of causing disease

They are referred to as pathogens
- They can include a variety of:
  - Viruses
  - Bacteria
  - Protozoa
  - Fungi

Pathogens can be present in blood or OPIM

PATHOGENS OF CONCERN IN DENTISTRY

Hepatitis B virus (HBV)

Hepatitis C virus (HCV)

Human Immunodeficiency virus (HIV)

All three are bloodborne pathogens.

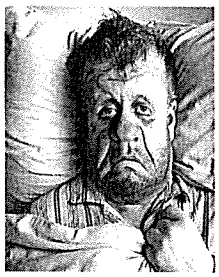
SARS-CoV-2 (the virus that causes Covid-19)

Is not typical of a bloodborne pathogen.

SUSCEPTIBLE HOST

Is that person who lacks the effective resistance to a particular pathogen.

Factors that influence a person's level of susceptibility:
- Age
- Physical conditions
- Medications
- Immunization
- Underlying medical conditions



MODE OF TRANSMISSION

The mechanism by which the pathogen makes its way to the host.

- **Direct Contact**
  - ✓Occurs when a pathogen is transmitted directly from an infected person to you.
- **Indirect Contact**
  - ✓Occurs when an inanimate object serves as a temporary reservoir for the pathogen.

Airborne
- ✓when the pathogen is airborne via droplet spatter or aerosols.

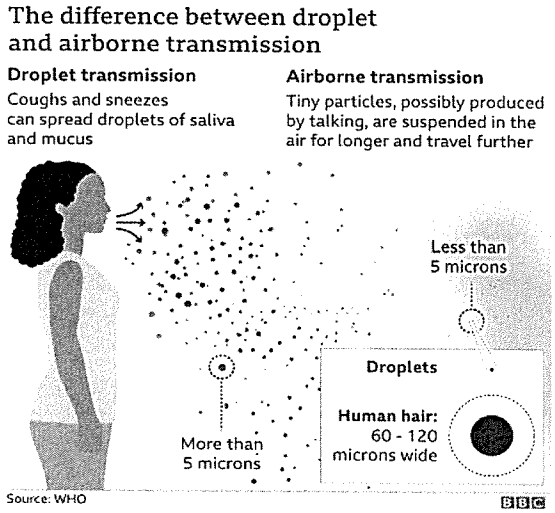
HOW COVID-19 SPREADS

COVID-19 is spread in three main ways:

Breathing in air when close to an infected person who is exhaling small droplets and particles that contain the virus.

Having these small droplets and particles that contain virus land on the eyes, nose, or mouth, especially through splashes and sprays like a cough or sneeze.

Touching eyes, nose, or mouth with hands that have the virus on them.



POTENTIAL ROUTES OF TRANSMISSION

- Patient to DHCP
- DHCP to Patient
- Patient to Patient

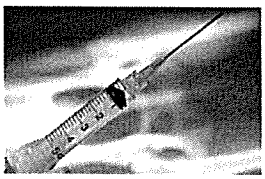
STANDARD PRECAUTIONS

The minimum infection control practices that apply to all patient care in any setting where health care is delivered, whether or not a patient is suspected or confirmed as having an infection. The purpose of standard precautions is to decrease the risk of transmission of bloodborne and other pathogens from both known and unknown sources.

TRANSMISSION – BASED PRECAUTIONS

Transmission-based precautions are used in addition to Standard Precautions for patients with known or suspected infection

IMMUNIZATIONS



Immunizations are an essential part of a disease prevention and infectious control program.

VACCINATION MYTHS

Vaccines cause autism

Infants' immune systems can't handle vaccines

Natural immunity is better

Vaccines contain unsafe toxins

Better hygiene and sanitation

Not worth the risk

Can infect you with the disease

No need to vaccinate/infection rate is down

THE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES

The ACIP provide national guidelines for immunization of health care providers (HCP).

ACIP recommends that all HCP be vaccinated or have documented immunity to these diseases:

- HBV, influenza, measles, mumps, rubella, and chicken pox (varicella)

All the above are vaccine preventable diseases.

HEPATITIS B

Vaccination is required of all employees who will have patient contact and employees working with infectious instruments and/or materials that are exposed to blood, saliva or OPIM.

OSHA's Bloodborne Pathogen Standard in 1991 mandated that all employers must offer the Hep B vaccine to employees without cost within 10 working days if they are potentially exposed at work to blood or OPIM.

HEPATITIS B

DHCP provider declines the vaccination

Must sign a declination statement

Educate on the risk of exposure

Declination Statement

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to me; however, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine I continue to be at risk of acquiring hepatitis B, a serious disease. If, in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee Signature:_____

Date:_____

TUBERCULOSIS

Overall, the risk of exposure for the DHCP is low; however, both the CDC and ADA agree dental practices should have a TB control program appropriate for their level of risk.

Kansas City, Mo Health Department Communicable Disease Prevention/ Public Health Preparedness Division at 816-513-6152

Kansas Department of Health and Environment at 785-296-1086

ELEMENTS OF A TB CONTROL PROGRAM

Outline the symptoms of active TB

Periodic community risk assessment

Baseline tst

Medical history update

Refer immediately if suspected

Defer elective dentistry

Dhcp with tb

COVID-19 CDC RECOMMENDATIONS

1. Assessment: Is the DHCP or the patient at risk
2. Availability of PPEs
3. Stay informed (changes daily)
4. Provide care in the safest way

ELEMENTS OF STANDARD PRECAUTIONS

Hand Hygiene

Personal Protective Equipment

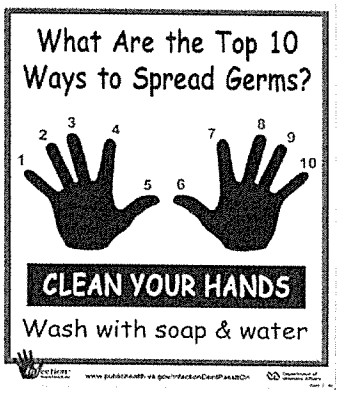
Safe Injection Practices

Safe Handling of Potentially Contaminated Equipment or Surfaces in the patient area

Respiratory Hygiene / Cough Etiquette

HAND HYGIENE

Still considered the single most important way to reduce the risk of disease transmission!



CDC: HANDS NEED TO BE CLEANED

When visibly dirty

After touching contaminated objects with bare hands

Before and after patient treatment (before glove placement and after glove removal)

HOW SHOULD YOU WASH YOUR HANDS?

Wet your hands with clean running water (warm or cold) and apply soap.

Lather your hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.

Scrub your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.

Rinse your hands well under clean, running water.

Dry your hands using a clean towel or air dry them.

Turn off water using the paper towel and to open the door as you exit

HAND HYGIENE FOR ROUTINE DENTAL PROCEDURES

If hands are visibly soiled with blood, or opim

✓Use soap and water
✓Use anti-microbial soap and water
✓Do **not** use an Alcohol-based Hand Rub

If hands are **not** visibly soiled

✓Use soap and water
✓Use anti-microbial soap and water
✓Use alcohol-based hand rub

HAND HYGIENE DEFINITIONS

Handwash
✓Washing hands with plain soap and water

Antiseptic handwash
✓Washing hands with water and an antimicrobial soap (e.g. chlorhexidine, iodine, iodophors, chloroxylenol, triclosan)

Alcohol hand rub
✓Rubbing hands with an alcohol-containing preparation (at least 60% alcohol)

Surgical antisepsis
✓Handwashing with an antiseptic soap and an alcohol-based hand rub before operations by surgical personnel

SPECIAL HAND HYGIENE CONSIDERATIONS

Use hand lotions to prevent skin dryness

Consider compatibility of hand care products with gloves (e.g., mineral oils and petroleum bases may cause early glove failure)

Keep fingernails short

Avoid artificial nails

Avoid hand jewelry that may tear gloves

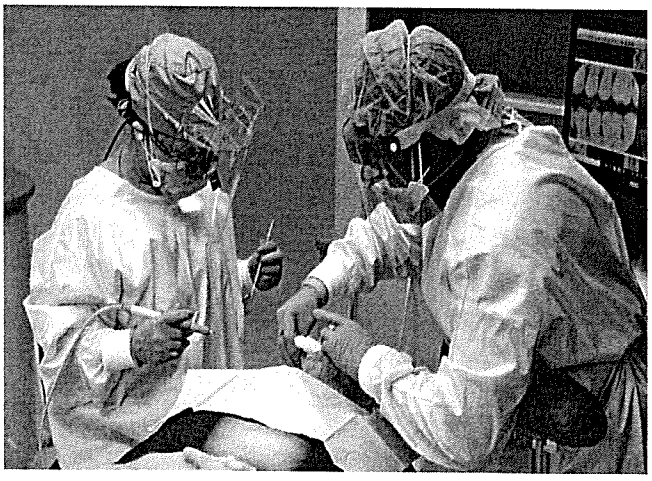
PERSONAL PROTECTIVE EQUIPMENT

It is a major component of Standard Precautions

Protects the skin and mucous membranes from exposure to infectious materials in spray or spatter

It consist of gloves, surgical masks, protective eyewear / face shields, and protective clothing

1720 PPE



OPTIMIZING THE SUPPLY OF PPE DURING SHORTAGES

1. Conventional Capacity
2. Contingency Capacity
3. Crisis Capacity

MASKS (PRE-COVID-19)

Should cover both the nose and the mouth

Should fit snugly against the face

If you have facial hair, keep well groomed in order for the mask to be worn effectively

Change it between patients or immediately if it gets wet

Remove it as soon as treatment is over

Avoid touching the mask, touch only the elastic or cloth ties

LEVELS OF FACEMASKS

ASTM Level 1

Low risk of fluid exposure

ASTM Level 2

Moderate risk of fluid exposure

ASTM Level 3

High risk of fluid exposure

MASK (COVID-19)

1. DHCP working in areas with no to minimal community transmission.
2. DHCP working in areas with moderate to substantial community transmission.

GUIDELINES FOR WEARING A RESPIRATOR

Must have a written respiratory protection policy

You must be medically cleared to wear the respirator

Must be fit tested for the respirator

No facial hair

Know the schedules for cleaning, disinfecting, storing, inspecting, repairing, and discarding

Must be properly trained in the proper use of respirators

TYPES OF RESPIRATORS

HOW TO DON & DOFF A DISPOSABLE RESPIRATOR

GLOVES

Minimize the risk of health care personnel acquiring infections from patients

Prevent microbial flora from being transmitted from health care personnel to patients

Reduce contamination of the hands of health care personnel by microbial flora that can be transmitted from one patient to another

It is not a substitute for handwashing!

GLOVE CONSIDERATIONS

Remove gloves that are torn, cut or punctured

Do not wash, disinfect, or sterilize gloves for reuse

Use sterile gloves when performing surgical procedures

Allergies to certain glove material

Keep finger nails short, minimize or eliminate jewelry

Always change gloves between patients

Use utility gloves for cleanup and disinfection

PROTECTIVE EYEWEAR & FACE SHIELDS

Shields the eyes of dhcp from spatter and debris generated from dental procedures

protective eyewear and face shields should be cleaned with soap and water as needed.

If visibly soiled, disinfect between patients according to the manufacturer's instruction

Because many dental procedures produce projectiles from various dental materials used, protective eyewear for the patient is advised

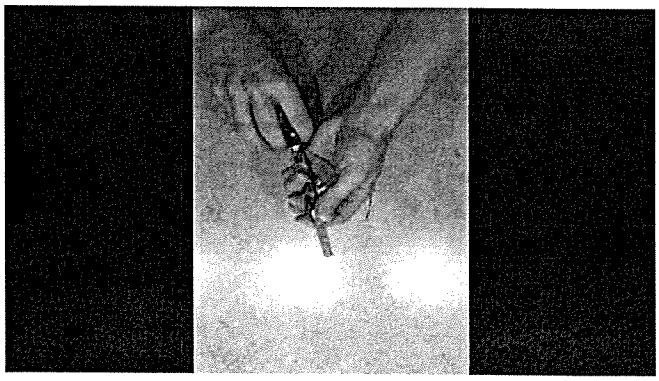
PROTECTIVE CLOTHING

Wear gowns, lab coats, or uniforms that cover skin and personal clothing likely to become soiled with blood, saliva, or infectious material

Change if visibly soiled

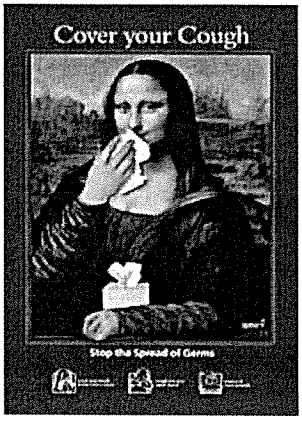
Remove all barriers before leaving the work area

ONE HANDED NEEDLE RECAPPING



COUGH ETIQUETTE

what should you do?



OCCUPATIONAL EXPOSURE

Unfortunately, accidents happen, and occupational exposures will occur.

Post-exposure management is an important component of any infection control program to prevent infection after the exposure.

The risk of HBV, HCV, and HIV are small, but any exposure to blood or saliva in the dental setting should be evaluated by a qualified health care professional.

OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

The CDC defines occupational exposure in dentistry as a percutaneous injury or contact of mucous membrane or non-intact skin with blood, saliva, tissue, or other body fluids that are potentially infectious.

WAYS TO PREVENT OCCUPATIONAL EXPOSURES

Standard Precautions

Engineering Controls

Work Practice Controls

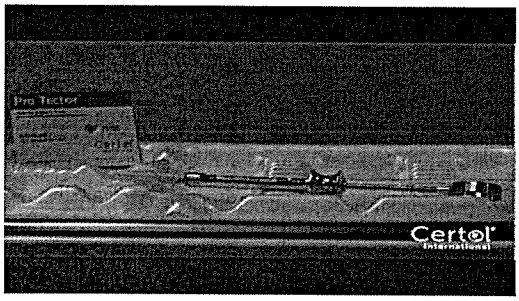
ENGINEERING CONTROLS

Technology-based measures that eliminate hazards through safer designs that isolate or remove the bloodborne pathogens hazard from the work place

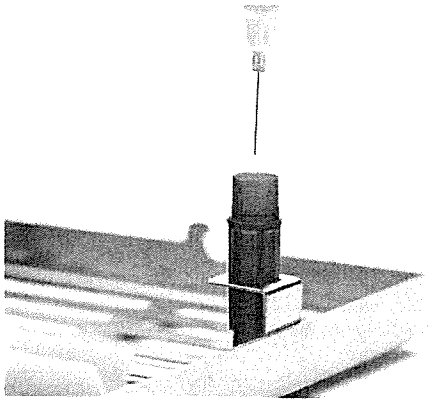
They rely on the device's technology, rather than the user's technique.

NEEDLE SHEATH HOLDER

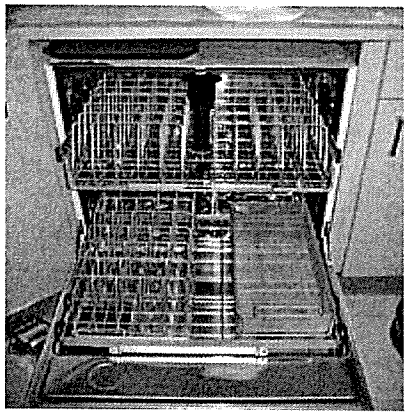
NEEDLE SHEATH HOLDER



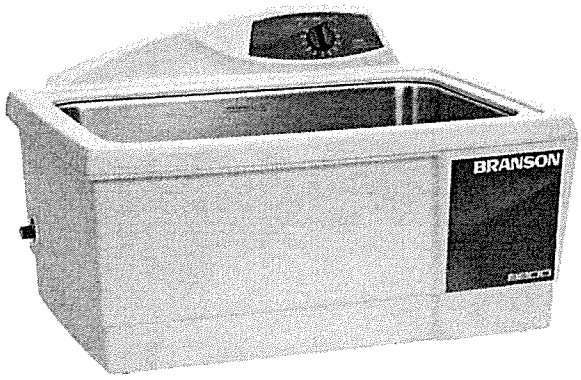
CASSETTE NEEDLE HOLDER



UTILITY WASHER



ULTRASONIC BATH



WORK PRACTICE CONTROLS

Are procedures that reduce the likelihood of exposure by altering the way in which a task is performed.

POST-EXPOSURE MANAGEMENT PROTOCOLS

Dental practices should have a comprehensive written plan to facilitate prompt reporting, evaluation, counseling, treatment, and medical follow-up of all occupational exposures.

Post-exposure management protocols should:

- Describe the type of blood or OPIM contact that may place dental members at risk for bloodborne infections
- Describe procedures for prompt reporting and evaluating such exposures
- Identify a health care professional who is qualified to provide counseling, medical evaluations and procedures in accordance with the most current recommendations of the U.S. Public Health Service.

EXPOSURE TO HEP B VIRUS

Vaccinated DHCP

Vaccinated, non-responder

Vaccinated but no record of anti-HB surface ANTIBODIES

DHCP undocumented vaccinations

DHCP WITH HEP B

How is the patient at risk

✓the DHCP must be sufficiently viremic

✓the DHCP must have an open wound that allows exposure to their blood or other infectious bodily fluids

✓the providers blood or infectious bodily fluid must come into direct contact with a patients wound

specified exposure-prone procedures

✓Major oral surgery procedures would be overseen

Expert panel

✓Responsible for providing oversight of the infected DHCP's practice

NOTIFICATION TO PATIENT

No notification necessary

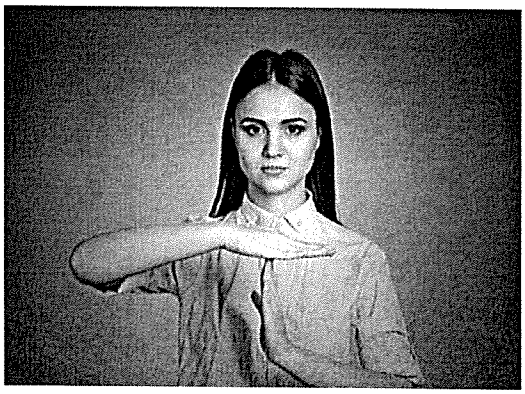
In addition, the Consult Subcommittee determined that there was no scientific or ethical basis for the restrictions that some medical and dental schools have placed on HBV-infected students and concluded that such restrictions were detrimental to the professions as well as to the individual students.

COVID RELATED EXPOSURE

Staff are encouraged to stay home if they have symptoms or a fever or if they were exposed to someone known to have Covid-19.

Can not return until at least 10 days have passed since symptoms first appeared

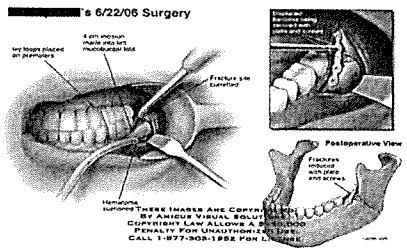
At least 24hrs have passed since last fever without the use of fever-reducing medication



ORAL SURGICAL PROCEDURES

Present a risk for microorganisms to enter the body

Involve the incision, excision, or reflection of tissue that exposes normally sterile areas of the oral cavity



ORAL SURGICAL PROCEDURES

ADA considers these procedures as surgical and therefore require surgical gloves:

- ✓Biopsy
- ✓Periodontal surgery
- ✓Apical surgery
- ✓Implant surgery
- ✓Surgical extractions

SURGICAL HAND ANTISEPSIS

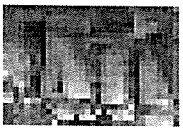
Must use an antimicrobial soap
or
if you use a non-antimicrobial soap you must follow up with an alcohol-based hand rub.

Must scrub the hands, fingers and forearms

Alcohol-based hand rubs should contain chlorhexidine, quaternary ammonium compounds, octenidine, or triclosan to achieve germicidal persistent activity.

STERILE IRRIGATING SOLUTIONS

Use sterile saline or sterile water as a coolant/irrigator when performing surgical procedures



Use devices designed for the delivery of sterile irrigating fluids

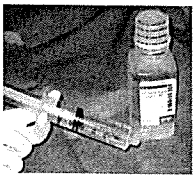


Photo credit, top: Lt. Col. Jennifer Harte, U.S.A.F. Dental Investigation Service, Great Lakes, IL

Photo credit, bottom: Eve Cuny, University of the Pacific School of Dentistry, San Francisco, CA

CLEANING, DISINFECTION & STERILIZATION

Cleaning reduces the number of microorganisms present

Disinfection is less lethal to pathogentic organism than sterilization

Sterilization is the process that kills all types and forms of microorganisms

CLASSIFICATION OF PATIENT CARE ITEMS

Critical

Semi-critical

Non-critical

STERILIZATION PROCESS

Decontamination

Inspection & Packaging

Sterilization

Storage

DECONTAMINATION

Make safe by removing or reducing contamination by infectious organisms or other harmful substances; the reduction of contamination to an acceptable level.

An item that has been disinfected is less likely to transmit infection than one that hasn't.

There is only a reduction in the number of microorganisms, therefore you still need to wear your PPE

Manual disinfection vs mechanical disinfection

INSPECTION & PACKAGING

Without thorough cleaning, any organic matter remaining on the instruments can protect microorganisms during the sterilization process; sterilization cannot be assured, even with longer sterilization times.

Packaging after inspection is the final step before the instruments go into sterilization

PACKAGING

Wraps
- Porous material that allows steam to penetrate

Pouches
- Special medical grade bag that allows steam to penetrate

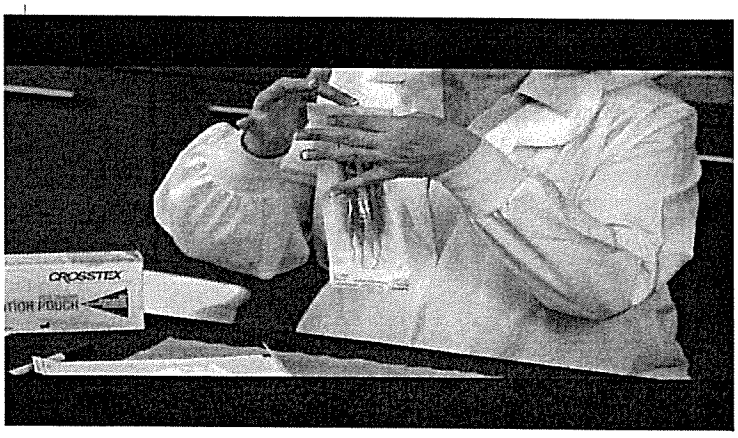
Unwrapped

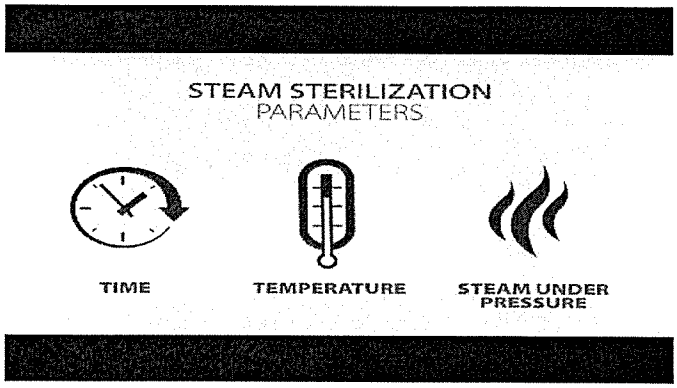
STERILIZATION

Steam
- is achieved by exposing products to saturated **steam** at high temperatures

Dry
- utilizes hot air that is either free from water vapor, or has very little of it

Chemical
- refers to a technique of **sterilization** making use of a **chemical** agent



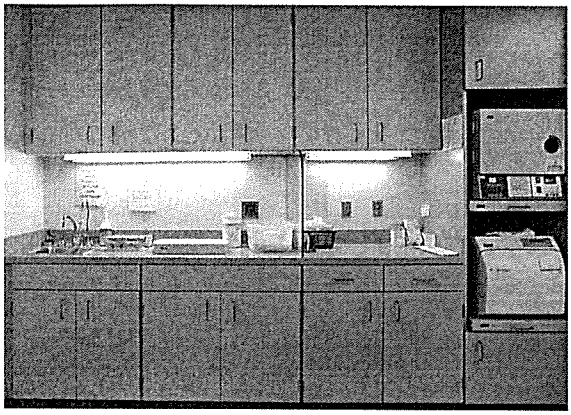


STORAGE

Store sterilized packages behind closed doors or inside drawers to prevent packages being comprimised

Use event-related practices

STERILIZATION DESIGN FLOW



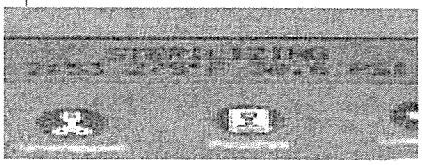
STERILIZATION MONITORING

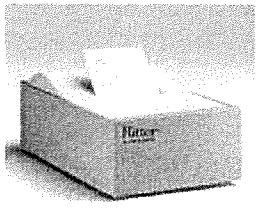
Mechanical

Chemical

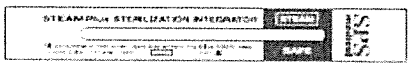
Biological

MECHANICAL READOUT





CHEMICAL INDICATOR

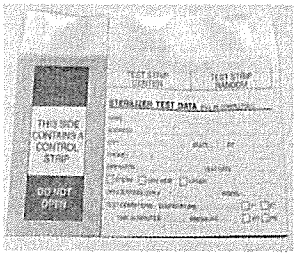


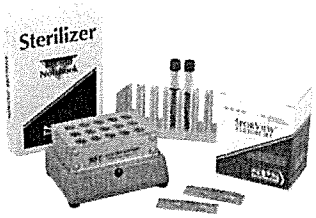
UNPROCESSED

PASS

FAIL

BIOLOGICAL SPORE TEST





FAILED SPORE TEST

#1 reason for a failed spore test is overloading

Have the machine inspected

Take it out of service

Repeat the spore test

Go over proper loading

ENVIRONMENTAL SURFACES

Clinical Contact Surfaces

Housekeeping Surfaces

CLEANING CLINICAL CONTACT SURFACES

Risk of transmitting infections greater than for housekeeping surfaces

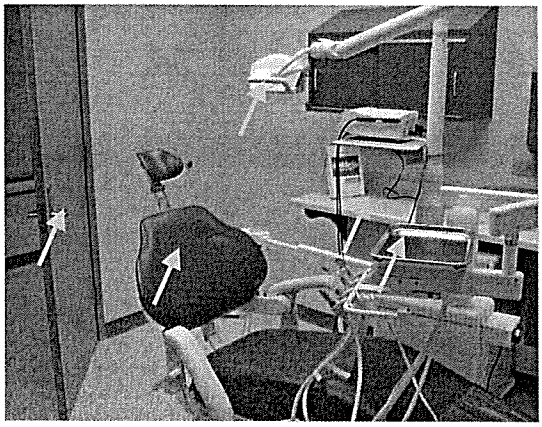
Surface barriers can be used and changed between patients

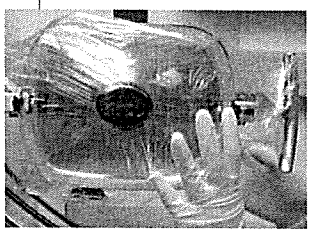
OR

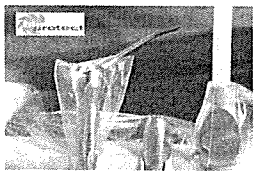
Clean then disinfect using an EPA-registered low- (HIV/HBV claim) to intermediate-level (tuberculocidal claim) hospital disinfectant

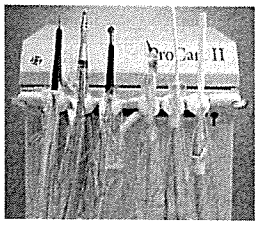
Must wear appropriate ppe

CLINICAL CONTACT SURFACES









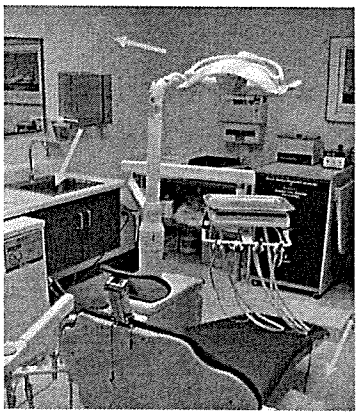
CLEANING HOUSEKEEPING SURFACES

Routinely clean with soap and water or an EPA-registered hospital disinfectant / detergent

Clean mops and cloths and allow to dry thoroughly before re-using

Prepare fresh cleaning and disinfecting solutions daily and per manufacturer recommendations

HOUSEKEEPING SURFACES



GENERAL CLEANING RECOMMENDATIONS

Use barrier precautions (e.g., heavy-duty utility gloves, masks, protective eyewear) when cleaning and disinfecting environmental surfaces

Physical removal of microorganisms by cleaning is as important as the disinfection process

Follow manufacturer's instructions for proper use of EPA-registered hospital disinfectants

Do not use sterilant/high-level disinfectants on environmental surfaces

MEDICAL WASTE

Medical Waste:

- Not considered infectious, thus can be discarded in regular trash

Regulated Medical Waste:

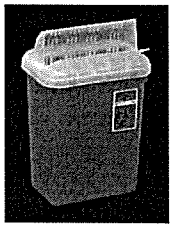
- Poses a potential risk of infection during handling and disposal

REGULATED MEDICAL WASTE MANAGEMENT

Properly labeled containment to prevent injuries and leakage

Medical wastes are "treated" in accordance with state and local EPA regulations

Processes for regulated waste include autoclaving and incineration



AMALGAM WASTE

The "Best Management Practices (BMP) for Amalgam Waste" are a series of amalgam waste handling and disposal practices that include but are not limited to initiating bulk mercury collection programs, using chair side traps, amalgam separators compliant with ISO 11143 and vacuum collection, inspecting and cleaning chair side traps, and recycling or using a commercial waste disposal service to dispose of the amalgam collected.

TYPES OF AMALGAM WASTE

NON-CONTACT AMALGAM

CONTACT AMALGAM

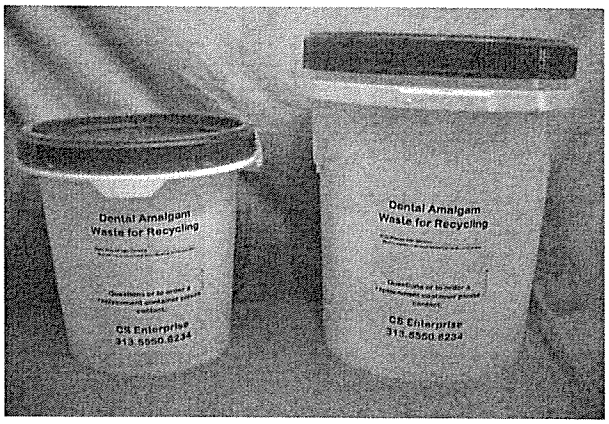
CHAIRSIDE TRAPS

Vacuum pump filters

Amalgam sludge

empty amalgam capsules

RECEPTACLE FOR AMALGAM WASTE



OTHER CONSIDERATIONS

Extracted teeth

Biopsy specimens

Dental unit waterlines

Dental Laboratory

Dental hand pieces and other devices attached to air and water lines

Saliva ejectors

Dental Radiology

Aseptic technique for parenteral medications

Prepreprocedural mouth rinses

EXTRACTED TEETH

Considered regulated medical waste

✓Do not incinerate extracted teeth containing amalgam

✓Clean and disinfect before sending to lab for shade comparison

Can be given back to patient

HANDLING EXTRACTED TEETH IN EDUCATIONAL SETTINGS

Remove visible blood and debris

Maintain hydration

Autoclave (teeth with no amalgam)

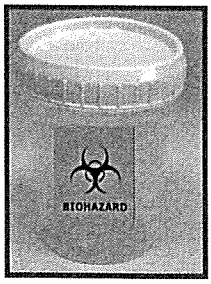
Use Standard Precautions

HANDLING BIOPSY SPECIMENS

Place biopsy in sturdy, leakproof container

Avoid contaminating the outside of the container

Label with a biohazard symbol



DENTAL WATER QUALITY

For routine dental treatment, water should meet regulatory standards for drinking water.*

* <500 CFU/mL of heterotrophic water bacteria

DENTAL UNIT WATERLINES, BIOFILM & WATER QUALITY

Waterlines are the narrow-bore plastic tubing that carries the water to the high speed handpiece, air/water syringe, and the ultrasonic scaler.

Biofilm is a thin, slimy film of microorganisms that adhere to the interior surface of waterlines

Water quality should be at a minimum, <500 CFU/mL

ADA RECOMMENDATIONS

DENTAL UNIT WATER SYSTEMS MUST BE REGULARLY MAINTAINED to minimize microorganisms and biofilms colonizing

Urge Manufacturers to continue to develop accessory components, retrofitted for current dental units

Urge manufacturers in the U.S. to have future units, equipped with separate water reservoir independent of the public water supply.

HOW TO IMPROVE WATER QUALITY

Independent water reservoirs

Chemical treatment

Daily draining and air purging

And point of use filters

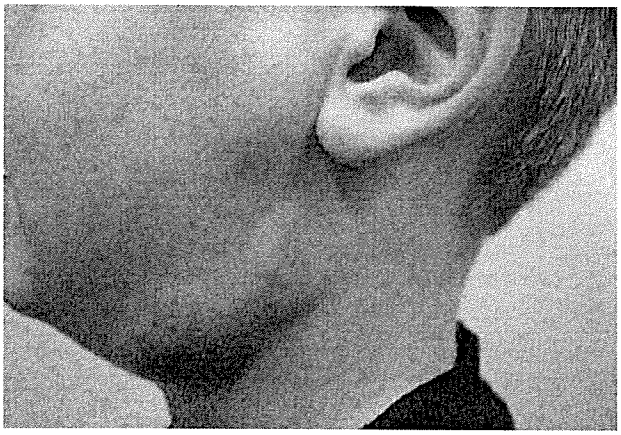
WHY?

Anaheim, California

Georgia

MYCOBACTERIUM ABSCESSUS

MYCOBACTERIUM ABSCESSUS



OTHER DUW CONSIDERATIONS

Anti-retraction valves

Educate & train

Stay current

FDA approved

Involve staff

DENTAL LABORATORY

Dental prostheses, appliances, and items used in their making are potential sources of contamination

Handle in a manner that protects patients and DHCP from exposure to microorganisms

DENTAL LABORATORY

Clean and disinfect prostheses and impressions

Wear appropriate PPE until disinfection has been completed

Clean and heat sterilize heat-tolerant items used in the Mouth

Communicate specific information about disinfection procedures

DENTAL HANDPIECES AND OTHER DEVICES ATTACHED TO AIR AND WATERLINES

Clean and heat sterilize intraoral devices that can be removed from dental unit waterlines

Follow manufacturer's instructions for cleaning, lubrication, and sterilization

Do not use liquid germicides or ethylene oxide

SALIVA EJECTORS

Previously suctioned fluids might be retracted into the patient's mouth when a seal is created

Do not advise patients to close their lips tightly around the tip of the saliva ejector

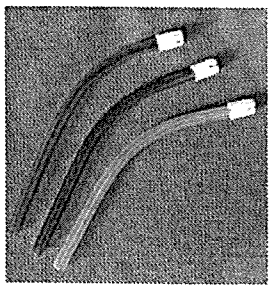


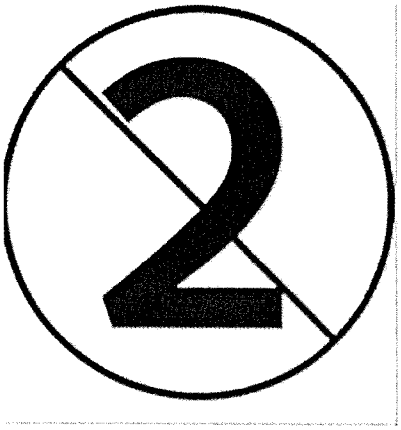
Photo credit: Lt. Col. Jennifer Harte, U.S.A.F. Dental Investigation Service, Great Lakes, IL.

SINGLE-USE ITEMS

Items that can not be reprocessed

Help to reduce the potential of patient-patient contamination

Saves time



DENTAL RADIOLOGY

Wear gloves and other appropriate personal protective equipment as necessary

sterilize heat-tolerant radiographic accessories

Transport and handle exposed radiographs so that they will not become contaminated

Avoid contamination of developing equipment

PARENTERAL MEDICATIONS

Medications that are injected into the body

Cases of disease transmission have been reported

Must be Handle safely to prevent transmission of infections

PRECAUTIONS FOR PARENTERAL MEDICATIONS

IV tubing, bags, connections, needles, and syringes are single-use, disposable items

Single dose vials

- Do not administer to multiple patients even if the needle on the syringe is changed
- Do not combine leftover contents for later use

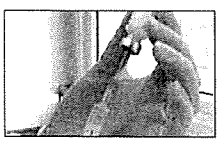


Photo credit: Lt. Col. Jennifer Harte, U.S.A.F. Dental Investigation Service, Great Lakes, IL.

PREPROCEDURAL MOUTH RINSES

Antimicrobial mouth rinses prior to a dental procedure

- ✓ Reduce number of microorganisms in aerosols/spatter
- ✓ Decrease the number of microorganisms introduced into the bloodstream

Unresolved issue—no evidence that infections are prevented

HAZARD COMMUNICATION STANDARD

Every employer is responsible for developing and maintaining a hazardous materials management program to best ensure the safety of employees.

It's required by state and federal regulations and Joint Commission requirements.

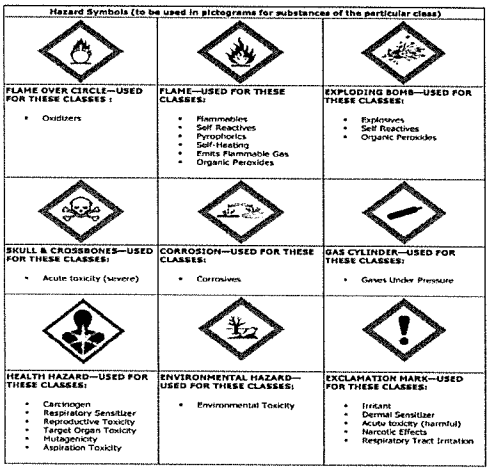
SAFETY DATA SHEET

A written statement detailing information about a chemical or toxic substance including potential hazards and appropriate handling methods. An SDS is provided by the product manufacturer to the product buyer, and it must be posted and/or made available in a place that is easily accessible to those that will use the product.

SDS INCLUDES

1. Identification
2. Hazard identification
3. Composition
4. First aid measures
5. Fire-fighting measures
6. Accidental release measure
7. Handling and storage
8. Exposure control/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information

SDS SYMBOLS



PROGRAM EVALUATION

"Systematic way to improve (infection control) procedures so they are useful, feasible, ethical, and accurate"

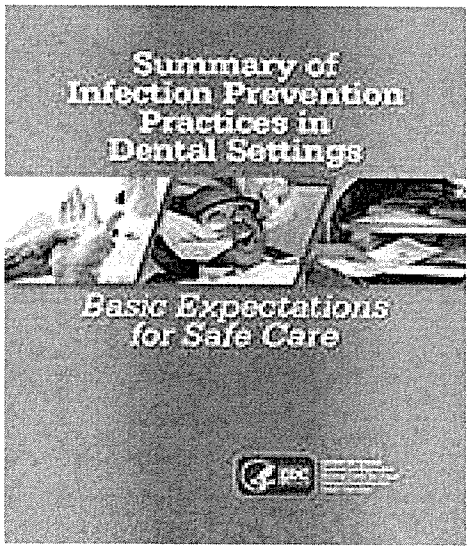
- **Develop standard operating procedures**
- **Evaluate infection control practices**
- **Document adverse outcomes**
- **Document work-related illnesses**
- **Monitor health care-associated infections**

PROGRAM EVALUATION

Strategies and Tools

- ✓ **Periodic observational assessments**

- ✓ **Checklists to document procedures**
- ✓ **Routine review of occupational exposures to bloodborne pathogens**



INFECTION CONTROL CHECKLIST

Section 1

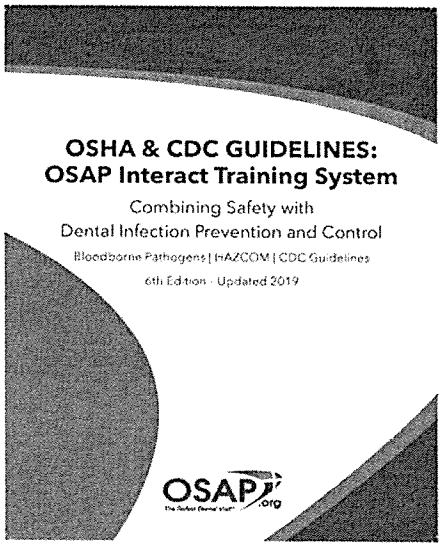
Consists of Policies and Practices

Section 2

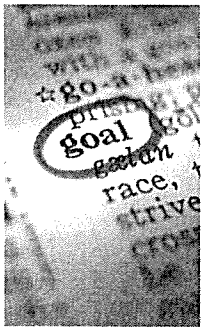
Direct Observation of Personnel and Patient Care Practices

OSAP

The Organization for Safety, Asepsis and Prevention (OSAP) is a growing community of clinicians, educators, researchers, and industry representatives who advocate for safe and infection-free delivery of oral healthcare.



INFECTION CONTROL PROGRAM GOALS



Provide a safe working environment

- Reduce health care-associated infections
- Reduce occupational exposures

https://www.cdc.gov/oralhealth/infectioncontrol/guidelines/inde

https://www.osap.org/store/ViewProduct.aspx?id=1168312

https://health.mo.gov/living/healthcondiseases/communicable/novel-coronavirus/#dashboard (great resource for Covid-19 in Missouri)

https://www.osap.org

Take safety viral/dental infection control awareness month/September

bruningm@umkc.edu

That's all Folks!