Dental Office

Infection Control

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GENERAL PRINCIPLES

CLINICAL PRACTICES

Sources of information for this manual include recommendations from the American Dental Association (ADA), Centers for Disease Control and Prevention (CDC), Environmental Protection Agency (EPA), Food and Drug Administration (FDA), New York State Department of Health (NYSDOH), New York State Department of Environmental Conservation (NYSDEC), New York State Education Department (NYSED), Occupational Safety and Health Administration (OSHA), and the Office Safety & Asepsis Procedures Research Foundation (OSAP)

GENERAL PRINCIPLES

PURPOSE

This manual presents guidelines and recommendations to promote compliance with New York State and OSHA infection control expectations and requirements. It is designed to complement lecture material and serve as an ongoing reference.

PERSONNEL REQUIREMENT

The Revised Bloodborne Pathogens Standard, effective April 18, 2001 - 29 CFR 1910.1030, requires participation from all levels of employees in decision-making activities. On an annual basis, all personnel should have the opportunity to provide their input and suggestions for improving the office's program, including consideration of new products and processes.

SCOPE

All personnel involved with direct patient care activities are required to comply with state & federal infection control standards. The employer has an ethical responsibility to monitor employees to ensure they practicing outlined protocols.

CONCEPTS AND DEFINITIONS

Administrative Controls - provide education, training, and standard operating procedures. Assign responsibility: An individual knowledgeable in infection control guidelines and recommendations should manage the exposure control and prevention program. Incorporate training, education, and standard operating procedures for preventing occupational exposure to blood and other potentially infectious fluids in: dental education curricula, job orientation, periodic training.

Aerosols - airborne debris, smaller than five microns in diameter, that remain suspended in air, and can be aspirated into bronchioles. Aerosols are generated by turbine handpieces, air/water syringes and cavitrons. Aerosols may contain blood, but infection transmission risk is considered low.

Airborne transmission: a means of spreading infection in which droplet nuclei are inhaled by the susceptible host.

Alcohol-based hand rub: an alcohol-containing preparation designed to reduce the number of viable microorganisms on the hands. Because these products do not remove soil, application must be preceded by a soap and water wash when used on soiled hands.

Antibody to HBsAg (anti-HBs): an indicator of past infection with, or immunity to, the hepatitis B virus.

Bacterial count: refers to an estimate of the number of bacteria per unit sample, expressed as colony-forming units (CFUs) per square centimeter (cm^2) per milliliter (ml).

Barrier material: material that prevents the penetration of microorganisms, particulates, and fluids.

Bioburden: the microbial or organic debris on a surface or object prior to decontamination.

Biofilm: microbial communities of cells attached to a substrate or to each other. The cells are embedded in a matrix of extracellular polymeric substances (glycocalyx), and exhibit increased resistance to dislodgement and the effects of antimicrobial agents.

Cleaning: the removal of soil and organic debris, using the physical action of scrubbing with a detergent and water or an energy-based process (e.g., ultrasonic cleaners) with appropriate chemical agents.

Chain of Infection - model used to understand the infection process. An awareness of this cycle provides the knowledge to use methods of self-protection to break the chain.

Clinical Areas - clinics, designated adjacent support areas and laboratories where protective measures must be employed.

Colony-forming unit (CFU): the original cells that multiply to form a colony.

Dental Health Care Worker (DHCW) - all personnel involved with patient care, and related activities.

DHCW Task Classification:

Category 1 - tasks involve exposure to blood, saliva, or body fluids and tissues. Category 1 tasks require the use of Standard Precautions.

Category 2 - tasks involve no exposure to blood, saliva, or body fluids and tissues

Dental Saliva - fluid and/or debris from the oral cavity; OSHA defines dental saliva as potentially infectious.

Disease Transmission - although the true risks are extremely low if proper strategies are utilized, both vertical and horizontal disease transmission is possible as a consequence of a dental interaction. Any individual may either act as a source of infection, or be infected, and transmit that infection to others in the dental office or other contacts including family, friends, etc. outside the dental interaction.

Droplet nuclei: small pathogen-containing particles of respiratory secretions expelled into the air by coughing, which are reduced by evaporation to small dry particles that can remain airborne for long periods; one possible mechanism for transmission of infection from one individual to another.

Engineering Controls - equipment, instruments or devices that remove or isolate a hazard; if an engineering control exists for a task, it should be used.

Examples include:

- Rubber dam
- Use of Barriers
- Operatory layouts
- Sharps containers
- Percutaneous hazards
- Ultrasonic cleaners

Needle recapping devices

Transport Bags

Exposure Gown - knee length protective garment with high neck and long sleeves worn for protection during procedures when occupational exposure is reasonably anticipated.

Event-related packaging: a storage practice that recognizes that a package and its contents should remain sterile until some event causes the item(s) to become contaminated

Germicidal Levels - may be classified in to four levels. Specific infection control activities require different levels of activity (See CDC/Spaulding Classification & Operatory Surfaces Asepsis Recommendations).

Low Level Disinfection - effective against some fungi, most medium sized viruses & 2 vegetative bacteria

Intermediate Level Disinfection - effective against TB, viruses, fungi and vegetative bacteria

High Level Disinfection - effective against all pathogenic organisms except high numbers of bacterial spores

Sterilization - effective against all pathogenic organisms including bacterial spores

Health-care-associated infection: any infection associated with a medical or surgical intervention. The term healthcare associated replaces nosocomial, which is limited to adverse infectious outcomes occurring in hospitals.

Independent water reservoir: container used to hold water or other solutions and supply it to handpieces and air/water syringes attached to a dental unit. The independent reservoir is isolate from the public water system,

Latex Reactions - there are basically three reactions of concern in the dental environment. The most common problem is an irritation associated with glove use. Although this reaction may mimic an allergy, it is due to improper hand care. The second category is a Type IV, or contact dermatitis. The least common, but most serious is the Type I, or a delayed hypersensitivity, that may lead to an anaphylactic type reaction. It is important to distinguish between the type of reaction a patient, or DHCW, experiences to provide the proper treatment and avoid future problems.

Occupational Exposure - reasonably anticipated skin, eye, mucous membrane or parenteral contact with blood or saliva that may result during direct or indirect patient care activities

Percutaneous injury: an injury that penetrates the skin (e.g., needlestick, or cut with a sharp object).

Routes of Transmission

- Direct contact with infectious lesion or infected saliva or blood
- Indirect transmission via transfer of organisms from a contaminated intermediate object
- Spatter of blood, saliva or secretions directly on to skin or mucosa
- Aerosolization of organisms

Standard Precautions: transmission-based approach to infection control. This strategy minimizes risks associated with exposure to bloodborne, airborne, respiratory, direct and indirect contact to pathogens. Standard precautions are used for all patients. At a minimum for bloodborne pathogens the following elements are required:

- Proper PPE Use
- Disinfection
- Sterilization of semi-critical & critical items
- Application of unit dose concept
- Proper disposal of regulated waste items

Other considerations based on the transmission for a specific disease might include the N-95 respirator body substance isolation; increased use of disposable instruments, deferring treatment during acute phases of disease, etc.

Sources of Infection - may include office personnel, patients or visitors:

- With an acute infection
- In the prodromal stage of an infection
- Via Carriers (known withholding information, or unknown)

Transmission-based precautions: practices that apply to patients with documented or suspected infection or colonization.

Uniform - clothing, worn at work, to impart a professional appearance. In general, a uniform does not comply with requirements for occupational exposure (see exposure gown).

Unit Dose Concept - only equipment, instruments and supplies required for the specific procedure(s), for the appointed patient, can be in the treatment area. Plan ahead, anticipate needs, be prepared; eliminate retrieval of additional instruments, equipment and supplies (e.g. wedges, bands, expendable supplies, medicaments, impression materials, resin syringe tips, etching tips, cotton rolls, gauze, liners, bases, etc.).

Universal Precautions – See Standard Precautions

Unprofessional Conduct Related to Infection Control - failing to use scientifically accepted infection control/prevention techniques or failing to monitor the performance of those for whom the professional is responsible (Rules of Board of Regents: Section 29.2; 13a; 1992). All DHCWs have a legal, moral, ethical and professional responsibility to comply with standards.

Work Practice Controls eliminate or reduce the likelihood of exposure by changing the way a task is performed; in the absence of engineering controls, work practice controls must be emphasized. Examples of work practice controls include:

- unit dose dispensing
- Donning and Doffing of PPE
- Isolation of chart and x-rays
- Announcing instrument passes

- One-handed scoop technique & needle recapping devices
- Replacing sharps containers before they are allowed to be overfilled
- Passing instruments with sharp ends pointing away from all persons
- Minimizing uncontrolled movement of sharp instruments under force
- Decontaminating and cleaning instruments prior to return to dispensary
- Disposing used impression material dispensing tips and etch applicators
- Obtaining retraction cord and wedges with uncontaminated scissors and cotton forceps
- Using instruments instead of fingers to retract tissues during suturing and anesthetic injections
- Use of barriers when touching surfaces that cannot be disinfected (e.g. computer keyboard if used in clinic or with digital x-ray equipment)

EXPOSURE CONTROL PLAN (ECP)

Offices must have a written plan that is accessible to all employees. Employer must designate an infection control and safety officer who assumes responsibility for training all new employees upon initial hire. Annual training must be provided for all Category 1 and 2 employees on annual basis during work hours and whenever a new procedure is introduced or a current procedure is revised. As part of the office's Quality Assurance Program, the trainer must document the date and length of the training, the topics discussed, include the trainer's credentials, employees who attended the training. This document must be maintained for 3 years and be available in the event of an OSHA inspection.

Additional topics that should be reviewed annually:

- Use of the eyewash station
- Use of a fire extinguisher
- Office's emergency evacuation plan
- Use of supplemental oxygen
- Location of emergency drug kit
- Use of the spill kit

Additional responsibilities of the infection control and safety officer:

- Infection Control & HAZCOM
- Maintain list of chemical and SDSs
- Ensure availability of documents to employees
- Review SOP procedures
- Monitor Compliance with labeling of secondary containers

RECOMMENDED VACCINATIONS, IMMUNIZATION, AND TB MANTOUX

ECP must identify the required and recommended vaccinations. These include: the hepatitis B series and a titer, MMR, varicella, Tdap and tetanus booster within 10 years, and an annual flu shot. A titer for hepatitis B is strongly recommended since 5-15% of those vaccinated for HBV do not seroconvert, giving a sense of false protection. Those individuals will require another series of 3 vaccinations as well as another titer. If still no conversion, further testing to rule out a chronic HBV infection. If the employee declines the hepatitis series a declination form must

be signed and saved in the department files for 30 years. Sample for is provided at the end of this document on page 29.

The primary mode of transmission for tuberculosis is airborne. During treatment procedures a DHCW and a patient share the same airspace. Because tuberculosis may be spread easily between a DHCW and a patient, employees must have a baseline Mantoux upon hire. An annual Mantoux is no longer required unless there is a high number of reported cases in the area.

RECEPTION ROOM RECOMMENDATIONS

Chairs, door knobs, windows at the reception desk, and pens should be cleaned and disinfected on a regular basis. Tissues, an open waste receptacle and a hand sanitizer must be available for patients. The CDC's respiratory and cough etiquette guidelines must be posted advising patients to

- cover nose and mouth with tissue when coughing and or sneezing
- or cover nose and mouth with upper arm
- immediately toss tissues into trash receptacle
- wash hands or utilize hand sanitizer provided

CLINICAL PRACTICES

MEDICAL HISTORY

A comprehensive medical history must be obtained, and regularly updated, for all patients. Questions relating to past and present infectious diseases and latex sensitivity should be asked. In some situations, it may be necessary to obtain a medical consultation prior to treatment. A patient history of latex sensitivity requires treatment modifications. Sample questions may include

1. Has there been a change in your health? If yes, what?
2. Have you seen your physician recently? If so, for what?
3. Are you taking any medications? If so, what?
4. Have you developed any allergies, or had recent adverse reactions? E.G. drugs or latex
5. Have you been recently diagnosed with any diseases including: cardiovascular or diabetes?
6. Have you had any problems after recent appointments including bleeding, reaction to anesthetic, or a rash?

Additional information may include:

- Significant signs and symptoms?
- Respiratory – cough?
- Gastro-intestinal problems?
- Elevated temperature?
- Recent travel?
- Health of family, friends or neighbors?

ACTIVE DISEASE STATES

Failure to provide treatment to a patient may constitute discrimination. If concerns exist relative to treatment of a patient, for any reason, it is necessary to review the circumstances on an individual basis. A person with latent tuberculosis is non-infectious and can be treated in the dental office using standard infection control precautions.

Patients with active tuberculosis cannot be treated in the average dental office because standard precautions are insufficient. Therefore, treatment should be deferred. If emergency care is needed treatment must be provided in a facility that has the capacity for airborne infection isolation. Symptoms of tuberculosis may include:

- Persistent cough
- Productive cough
- Weight loss
- Night sweats
- Fever
- Chest Pain
- Bloody Sputum or Hemoptysis
- Fatigue
- Hoarseness

Referral of patients with active TB may be indicated (TB is an exception to the Americans w/ Disabilities Act). Standards of care for patients with bloodborne pathogens must be met in a dental office using standard precautions. However, the medical condition of the patient must be evaluated. For example, although a patient with severe hepatitis C requiring extractions can be treated utilizing Standard Precautions, the patient may need to be referred for treatment due to potential bleeding problems or other medical management considerations.

Employees with a Communicable Disease

DHCWs with a communicable disease must minimize the likelihood of transmitting the disease by limiting contact with patients and other employees. The decision of a DHCW to provide care and/or services during a period of potential communicability requires that the DHCW can safely perform expected tasks without the risk of infecting patients and other DHCWs.

6 LINKS IN THE CHAIN OF INFECTION: Protocols are implemented to break the chain.

a) an infectious agent
b) reservoir host
c) portal of exit
d) method of transmission
e) portal into new hosts
f) susceptible host

HANDWASHING

Since hands constitute a major source of cross contamination, stringent attention to handwashing is required to reduce the likelihood of spreading infectious diseases between and among patients and DHCWs. Handwashing is the first line of defense. A 20 second wash with tepid water followed by a 10 second cool rinse is recommended. Bracelets, jewelry and rings harbor bacteria and must be removed prior to washing hands. Moisture remains under a ring after hand washing and will incubate organisms. Jewelry also jeopardizes the integrity of gloves. Therefore, no jewelry can be worn during any procedures.

The skin of DHCWs hands harbor resident and transient microorganisms. Most resident microorganisms found in the superficial layers of the skin are not highly virulent, but may be responsible for some skin infections. DHCW contact with infected patients is a source of transient microorganisms on DHCW's hands. Transient microorganisms pose the greatest risk of cross-infection. Adequate handwashing will remove or inhibit both transient and resident organisms. For routine procedures, washing with plain soap is adequate. Use an antimicrobial soap for more invasive procedures, such as surgery. For all handwashing, convenient placement of sinks, towels, and soaps will encourage use by workers. Vigorously rubbing lathered hands, interlocking fingers and rubbing the thumbs is essential. Dry hands well before donning gloves. A surgical scrub is advised before implant and perio surgeries.

General Principles:
1. Friction/rubbing removes microorganisms
2. Lathering holds organisms away from skin
3. Rinsing washes microorganisms off the skin
4. When to wash hands:

When to Wash Hands:
1. after using the restroom and grooming
2. at the beginning and end of each workday
3. before donning and doffing gloves
4. before eating lunch
5. after touching contaminated surfaces
6. before and after each patient
7. before handling supplies and equipment

Weeping Dermatitis: DHCWs with open sores or weeping dermatitis must refrain from direct patient contact and handling of patient care equipment until the condition is resolved. Most common cause is abrasive soap, rough paper towels, or placing wet hands into gloves.

ABHS: Alcohol based hand sanitizers must contain 60-95% ethyl or isopropyl alcohol. They do not kill all germs so they cannot be utilized if hands are soiled. Washing with soap and water is the better option. Read manufacturer's recommendation for amount to use and length of time to work into the hands (approx. 20 sec just like a handwash). Be certain hands are dry before placing gloves and do not rinse or dry sanitizer off the hands or it will not be effective. ABHS are flammable, if buying in bulk consider purchasing a flammable storage unit.

PREPROCEDURE RINSE

Rinsing with chlorhexidine or an ADA accepted antibacterial mouthwash such as Listerine and Crest Pro-Health Advanced Antibacterial Protection might reduce both aerobic and anaerobic contamination in aerosols by up to 93%. Reducing the aerosol bioburden will decrease surface contamination in and around the treatment area. Rinses must be utilized full strength for 30 seconds to be most effective.

PERSONAL PROTECTIVE EQUIPMENT

Routine use of barrier devices including eyewear, masks, gloves, and gowns. Are required to eliminate or reduce exposure to blood, saliva and other OPIMs.

Eyewear - protective eyewear (glasses with solid side shields or a face shield must be worn by all DHCWs having contact with any aerosol spray, spatter or particulate matter including nonpatient activities. Protective eyewear must be cleaned and disinfected between patients. Protective eyewear should also be worn by patients when risk of debris entering a patient's eyes during polishing, use of compressed air, and the ultrasonic scaler.

Gloves - DHCWs having patient contact must wear disposable gloves whenever there is direct or indirect contact with blood, saliva, or mucous membranes. The regimen is:

- Wash hands with soap indicated by procedure
- Rinse with cold water and dry thoroughly
- Don gloves for specific use, either operatory setup or patient care or operatory clean up and disinfection

Gloves must not be washed or reused. Gloves must be removed, disposed, and hands washed thoroughly before leaving the clinical area. Gloved hands are not to be used for nonpatient activities such as answering telephone, opening drawers, retrieving supplies, handling records & x-rays, using the keyboard if it is not covered. The employer is responsible for providing glove liners or hypoallergenic gloves for employees who are allergic to the gloves normally provided.

Over gloves can be placed to retrieve items. Gloved hands must not be used to adjust glasses or face mask.

Autoclavable heavy duty utility gloves must be worn when cleaning and disinfecting the treatment area since disinfectants can jeopardize the integrity of exam gloves. They should also be worn when preparing instruments for sterilization. Utility gloves will be replaced if they are torn, punctured, cracked, peeling, or they become brittle.
Nitrile gloves can be worn if a patient is allergic to latex.

Gown - knee length, long sleeved exposure gowns must be worn by all DHCWs in clinical areas during occupational exposure. Exposure gowns, gloves and masks must not be worn outside designated clinical areas such as the rest room, an office, the reception room or the lunch room.

- A clean gown must be worn each day
- The gown must be changed when visibly soiled
- A gown may be worn only in designated clinical areas •
- Gowns must be removed with gloved hands and disposed or placed in a transport bag for laundering.

Masks - a level 3 disposable mask must be worn by all DHCWs who have contact with any aerosol, spray or spatter that may be generated from a patient or contaminated materials. Masks become contaminated very quickly. Masks, like gloves, should be used for only one patient contact. When properly applied, a mask covers both the mouth and nose. Wearing a mask under the chin, dangling from one ear, placed on the countertop for a later use, placed in a pocket, or around the wrist is an OSHA infraction. A contaminated face mask worn around the neck or on the forehead between patients does nothing more than spread contamination

to anything that touches the mask. Masks like gloves are single use. Mask use should be restricted to designated clinical and laboratory areas.

Head Covers - are optional

Clinic Shoes - must remain on site so organisms are transferred home and into the clinic

RESPIRATORY PROTECTION PROGRAM (RPP)

The office must have a written RPP if any employees are wearing a N95 respirator. The respirator must be NIOSH approved. The employee must receive medical clearance to wear the respirator, participate in mandated training, and be fit tested prior to use. We are no longer in a state of emergency so N95s can no longer be reused.

POST EXPOSURE PLAN

Emphasis should be placed on preventing accidental injuries and exposures by implementing safe work practice and engineering controls. However, accidents do occasionally occur so every office must have a Post Exposure Plan. If an injury occurs first aid should immediately be administered by washing the site with soap and water. The supervisor must arrange for a required evaluation and follow up care. A prudent office will have an appropriate arrangement with a qualified HCP.

A qualified health-care professional (HCP) is any health-care provider who can provide the mandated counseling and perform all medical evaluations and procedures in accordance with the most current recommendations of the US Public Health Service, including postexposure chemotherapeutic prophylaxis if indicated. In addition, the HCP should be familiar with the unique nature of dental injuries so they can provide appropriate guidance on the need for post exposure prophylaxis (PEP), If it is a high risk, the inured party will start the PEP but can discontinue if the source patient tests negative for HIV. Ideally care should be received within 2 hours but no longer than 36. The injured party can decline testing. A signed declination form must remain in the employee's file for 30 years.

HCP will provide employer with a Written Opinion stating employee received mandated counseling and was advised to return for follow-up counseling. The results of the testing however, will not be included in the report since that is confidential information.

STRATEGIES TO DECREASE PERCUTANEOUS OCCUPATIONAL EXPOSURES

When working with a dental sharp, appropriate engineering controls and/or work practices must be utilized to reduce the opportunity for an accidental percutaneous exposure. Dental sharps include:

- Anesthetic needles
- Matrix bands
- Reamers
- Curettes
- Scalers
- Explorers
- Scalpel blades
- Burs
- Files
- Suture needles
- Laboratory equipment
- Items capable of scraping or penetrating mucosa and skin

Engineering Controls: Use the scoop technique or a needle capping device. Offices are required to have staff evaluate various needle capping devices on an annual basis. Device screening and evaluation forms are available at the CDC website. Completed forms must be maintained in the Office's Quality Assurance Log. www.cdc.gov/oralhealth/infection control/forms.htm.

A sharps container must be located in the treatment room.

The following examples illustrate the application of controls and practices. Each provider must develop a style that embraces appropriate controls and practices when using dental sharps.

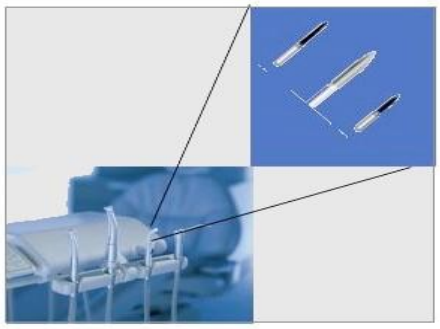
Work Practices

- Needle movement away from operator's body
- When possible, use a retractor, or instrument, to reflect tissue during needle placement and anesthetic administration
- One-handed needle disposal technique
- Needle disposal: after unscrewing syringe from needle (capped needle still in the Needle Cover Holder), using one hand - hold the unit upside down over a sharps container; squeeze unit to drop needle into the regulated waste sharps container.

"Universal Sharps Principle"

Never move the sharp or pointed end of instruments or equipment toward your body

Dental Burs



Engineering Controls

- Cleaned, packaged, sterilized and aseptic transfer

Work Practice Controls

- Handpiece w/ bur placed in holder facing away from operator and patient; after procedure contaminated bur immediately removed from handpiece

Double-ended Instruments (curettes, explorers, scalers, etc.)

Engineering Controls

- Instruments cleaned, sterilized instruments in cassette or sterilizer packaging

Work Practice Controls

- Visualize instrument during handling (not blindly)
- Clean contaminated instruments as soon as possible. Dip in a dappen dish of peroxide rather than wiping with gauze in your hand.

In the absence of an engineering control for a specific item or procedure, emphasis on safe work practices is required.

SURFACE DISINFECTION

During patient care, operatory surfaces and equipment become contaminated with saliva, blood, aerosols and spatter. Since pathogens can survive on these surfaces it is necessary to clean and disinfect surfaces to interrupt cross contamination. It is advisable to wear heavy duty utility gloves when doing so since the chemicals break down the integrity of examination gloves. See the Revised CDC/Spaulding Classification table for specific operatory surface treatment recommendations. The proper level of disinfection must be chosen for the specific application.

Selected disinfectants must be **EPA registered** and are categorized by their level of disinfection.

- Low- does not kill bacterial spores or *Mycobacterium tuberculosis*
- Intermediate- kills *Mycobacterium tuberculosis*
- High- kills *Mycobacterium tuberculosis* and some spores

Utilizing an intermediate disinfectant is the gold standard. Surface disinfection is accomplished with the "Spray-Wipe-Spray" or the Wipe-Discard-Wipe technique. The first spray or wipe cleans the surface to remove bioburden that will inhibit the effectiveness of the disinfection process. The second spray or wipe disinfects the surface. The surfaces must be allowed to air dry. Read manufacturer's recommendation for the kill time because this can vary. Some agents can be utilized for cleaning and disinfection.

CONTAINING CONTAMINATION

All possible engineering, work practice and administrative controls should be utilized to contain contamination. When strategies are employed to contain contamination within an area, it is easier and requires less time to clean, disinfect and prepare for the next patient.

Highest Concentration of Contamination: within 3' of the patient's oral cavity.

Limiting the spread of contamination and droplets is facilitated by strategies including:

- using high velocity evacuation - the saliva ejector removes water from the oral cavity

where HVE reduces the aerosols thrown into the room
- using a hygiene assistant to suction if one is available
- properly positioning the patient
- using a rubber dam
- avoiding contact with unprepared surfaces and objects
- apply the unit dose concept
- decluttering countertops
- transporting contaminated items from treatment room to sterilization area or lab in a closed container

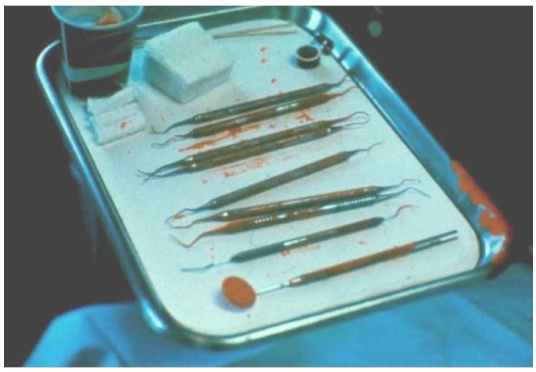
OPERATORY SURFACES

An effective operatory asepsis protocol requires surface classification. Surfaces can be classified and managed in three categories:

A) Touch Surfaces: Surfaces that are touched and contaminated during dental procedures. Examples: dental light handles, dental unit handle and controls, headrest adjustment mechanisms, computer keyboard.

Touch surfaces should be kept to a minimum. If a surface will, or might be touched, it should be cleaned, disinfected and covered with an impervious barrier. Barriers are single use and are removed and discarded with gloved hands between patients. The area only needs to be cleaned between patients and a new barrier placed with clean hands. (no need to disinfect)

If a covered touch surface is compromised and becomes visibly contaminated, it must be cleaned and disinfected before applying barriers for the next patient. Touch surfaces should be cleaned and disinfected at the end of each clinical day.



B) Transfer Surfaces:
Surfaces that are not touched, but which are usually contacted by contaminated instruments such as the holders for the handpiece, and instrument trays. Asepsis for transfer surfaces is the same as for touch surfaces.

C) Housekeeping, Splash, and Splatter& Aerosol Surfaces:
Surfaces in the operatory other than touch or transfer surfaces. This includes the floor and the walls. Splash and spatter surfaces should be cleaned daily with a low level disinfectant.

OPERATORY SURFACE TREATMENT RECOMMENDATIONS

(Surface use defines the required asepsis procedure)

Recommended Treatment Procedure	Key
1. Clean & sterilize between patients	1.C &S-b/w
2. Barrier or clean & disinfect between patients	2.B or C&D b/w
3. Clean at end of day	3.C-QHS
4. Clean between patients	4.C-b/w
5. Clean & disinfect between patients	5.C&D-b/w
6. Clean as needed	6.C-PRN

Treatment Category / Operatory Surface	**Critical/ Semi critical**	**Routine Contact**	**Limited Contact**	**House Keeping**
DENTAL LIGHT				
light shield				6.C-PRN
glass reflector				6.C-PRN
handles		2.B or C&D b/w		
on-off switch				6.C-PRN
UNIT CONTROLS				
unit handles		5.C&D-b/w		
control panel surface		5.C&D-b/w		
control knobs		5.C&D-b/w		
handpiece	1.C &S-b/w			
handpiece tubings		5.C&D-b/w		
handpiece holders			5.C&D-b/w	
instrument tray			5.C&D-b/w	
chair touch controls		2.B or C&D b/w		
air/water syringe body		5.C&D-b/w		
syringe tip	1.C &S-b/w	-or use disp		
CUSPIDOR				
bowl inside				3.C-QHS
bowl outer edges				3.C-QHS
cup filler spout				3.C-QHS
cuspidor control buttons				3.C-QHS
drain screen				3.C-QHS
CHAIR				
headrest knob & backing		2.B or C&D b/w		
headrest cushion				2.B or C&D b/w
seat back cushion				6.C-PRN
seat back casting				6.C-PRN
arm rest upholstery				6.C-PRN
seat cushion upholstery				6.C-PRN
foot controls				6.C-PRN

OPERATOR STOOL		
back cushion		6.C-PRN
seat cushion		6.C-PRN
adjustment levers (sit in chair & adjust before seeing pts. If you think you will need to adjust during appoint-ment can place a barrier)		6.C-PRN

HIGH LEVEL DISINFECTION
(IMMERSION STERILIZATION)

Heat sensitive semi-critical items must be pre-cleaned and processed using a hospital grade, high level disinfectant/sterilant such as 2.0-3.4% glutaraldehyde. Example: mirrors utilized during intra-oral photography are often processed in a high-level disinfectant. The items must be precleaned, rinsed and dried before dropping them onto a perforated tray placed in a container of the disinfectant. Immersing in a glutaraldehyde is a 10-hour process. Items should be removed with sterile tongs, rinsed well with sterile water and stored in a sterile container. Immersion sterilization is not ideal since it is not biologically verifiable. Both the CDC and ADA discourage use of immersion sterilization. The ideal option is to utilize disposable items if possible. Chemical vapors are a concern when using a glutaraldehyde. Therefore, it should never be sprayed. All PPE must in place when handling glutaraldehyde. Goggles must be worn to prevent splash to the eyes.

Revised CDC / Spaulding Classification

Category	Description	Examples	Risk	Process
Critical	Items that penetrate oral tissues	Scalers, hand instruments, burs, cutting instruments,, files, needles, & handpieces	High	Sterilization, or single use disposables
Semi-critical	Items that contact mucosa	Hand instruments, mouth props, plastic prophy angles, rubber dam frames, etc.	Medium	Sterilization; high level disinfection; or disposables
Non critical items (intraoral contact)	Items moistened with saliva	Impressions, prostheses, splints, other appliances, etc.	Low	Intermediate. level disinfection; repeat before returned to patient
Non-critical items (no intraoral contact)	Items that may contact unbroken skin	Face bows, BP cuff, stethoscope, pulse oximeter, etc.	Low	Intermediate level disinfection

Operatory Surfaces (patient care)	Items may contact dental personnel	Dental unit surfaces, laboratory equipment, x-ray equipment	Very low	Intermediate level disinfection or barriers
Housekeeping Surfaces	Items rarely contact staff or patients	Floors, walls, countertops, door knobs, etc. .	Minimal	Clean with a low level disinfectant

STERILIZATION AREA, AUTOCLAVE WRAPS & PACKAGING

Items must be transferred from the operatory to the sterilization area in a closed container.

There should be 4 sections to the office sterilization area.

- Receiving area for precleaning / decontamination of items
- Packaging area
- Sterilizing area
- Storage area

Precleaning can be accomplished with a table top ultrasonic unit or by using a thermal disinfector. Heavy duty gloves must be worn when placing and removing items from the ultrasonic. After rinsing, items must be allowed to dry before bagging them for sterilization. The ultrasonic must be tested on a monthly basis for efficiency using the aluminum foil test. See sample template for documenting testing of the ultrasonic. The dimples created during testing must be uniform. New solution is used daily and sometimes changed midday depending upon the number and types of instruments processed.

Packaging: paper bags, peel view pouches, wraps, or reusable bags.

Paper bags rip easily, remain wet after sterilization and you cannot see what is in the bag. Items in a bag with a tear must be rebagged and resterilized. Bags are fine for sterilizing scrub brushes since they are light weight.

Peel-vue pouches are paper on one side and plastic on the other so you can easily see what is inside the bag. The plastic side does not tear as easily, allowing for heavier items.

Two sheets of blue wrap should be used when wrapping a cassette. The outside wrap can be utilized as a tray cover on the bracket tray and the second wrap opened after seating the patient so the patient can see the cassette was sterilized.

DHCW should have gloved hands when bagging and wrapping instruments or cassettes for sterilization. Items must be dry before placing in autoclave package. Packages need to be staggered in a pyramid formation on the autoclave tray or lined up on their sides in the rack. Packages should be labeled with the date in the event spore testing comes back positive. It will make it easier to retrieve the items so they can be resterilized. Packages must be allowed to air dry in the sterilizer before handling. Handling wet packages jeopardizes the sterility of the package.

MONITORING STERILIZATION

All instruments, equipment and supplies that will be used for critical and semi-critical procedures must be sterilized. Any multiple use instruments, equipment or supplies that are stored between uses, must be wrapped or packaged. Proper attention to packaging:

- Allows sterility to reach all surfaces during the sterilization cycle
- Maintains sterility during handling, storage and distribution
- Enables aseptic instrument removal
- Packages should be labeled with the date in the event biological testing is positive

Mechanical, Chemical and Biological Monitoring must be performed. Some autoclaves produce a print out that demonstrates the unit reached proper temperature, pressure and time and contents are sterile.

Chemical Monitoring:

Type 1 Chemical Indicators are on the outside of the package and change color to show items have been processed. They only indicate a temperature change.

Type 5 Integrators are multiple parameter, they not only confirm proper temperature was achieved but also confirm proper time and pressure.

Biological Monitoring - performed weekly, either in-house or through an external lab. Please see page 30 for example template for documenting biological monitoring in the office's Quality Assurance Program.

DENTAL LABORATORY PRACTICE

(LABORATORY PROCEDURES ARE SEMI-CRITICAL)

Equipment, instruments, supplies & patient related items transferred to the dental laboratory must be disinfected or sterilized. Items being transferred must be place in a Transport Bag.

Equipment, supplies and patient related items used during the dental laboratory phases of patient care may be unavoidably exposed to pathogenic organisms through contact with saliva. Dried saliva presents a risk for cross contamination from patient-to-patient or to DHCW. Standard Precautions must be employed during laboratory procedures. Laboratory procedures should be completed in the dental laboratory not a clinic operatory.

Impressions - must be thoroughly rinsed to remove saliva, blood and debris and then disinfected prior to initiation of any procedure.
Models-must be disinfected after contact with a prosthesis or appliance that has been in a patient's mouth.

If patient items or appliances have never been in contact with saliva, they may be handled as noncontaminated. Unless equipment, instruments and supplies are used exclusively for noncontaminated patient items standard precautions must be employed.

RADIOLOGY PROCEDURES
(RADIOLOGY PROCEDURES ARE SEMI-CRITICAL)

The following steps must be used during radiological procedures.

- Gloves must be worn
- Barrier place on exposure button
- Sterile XCP devices, snap-a-rays, and bite sticks (or disposable)
- Barrier on keyboard if exposing digital images
- Films placed in a transport cup if taking to the dark room
- Remove gloves, wash hands and before taking transport cup to darkroom
- Place heavy duty gloves before removing barriers, cleaning and disinfecting room
- Clean and disinfect sensor if exposing digital images

If using an x-ray processor with a daylight loader care is required to avoid contamination of the sleeves, external and internal components.

- Place the cup containing exposed film packets inside the daylight loader
- Wearing clean powder free gloves, insert hands through the sleeves of the daylight loader or place gloves in daylight loader and place clean bare hands into the sleeves and place gloves on in the loader
- Carefully open all film packets allowing films to drop into a clean cup
- Once all the films packets have been opened remove gloves and place in the cup the film was in
- Process films with bare hands discard empty film wrappers, gloves and transport cup and place lead foils in a recycling box

STERILIZATION OF ITEMS

Instrument, Material or Item	Steam Autoclave	Dry Heat Oven	Chemical Vapor	Other Methods & Comments
Angle Attachments	**a	**a	**a	
Burs				
Carbon steel *	b	p	p	discard
Steel	a	p	p	discard
Tungsten-carbide	a	p	a	discard
Condensers	p	p	p	
Dapen Dishes	p	a	a	
Endodontic Instruments				
(Broaches, Files, Reamers)	p	p	p	
Stainless steel handles	a	p	p	
Stainless w/ plastic handles	p	p	b	
Fluoride Gel Trays				
Heat-resistant plastic	p	i	b	
Non-heat-resistant plastic	i	i	b	**p-discard
Glass Slabs	p	p	p	
Hand Instruments				
Carbon steel *	b	p	p	
Stainless steel	p	p	p	
High-speed Handpieces	**p	**b	**a	
Contra-angles	p	b	p	
Prophylaxis Angles				
(Disposable Preferred)	**a	**a	**a	**p-discard
Impression Trays				
Aluminum metal	p	a	p	
Chrome-plated	p	p	p	
Custom acrylic resin	i	i	i	**p-discard
Plastic	i	i	i	p-discard
Instruments in Packs	p	a-sm. packs	p	
Instrument Tray Setups				
Restorative	a-size limit	**a	a-size limit	
Surgical	p	p	p	
Mirrors	b	p	p	
Disposable Needles	i	i	i	**p-discard
Nitrous Oxide				
Nose piece	**p	i	**p	
Hoses	**p	i	**p	
Orthodontic Pliers				
High-quality stainless	p	p	p	
Low-quality stainless	**a	p	p	
With plastic parts	i	i	i	
Pluggers & Condensers	p	p	p	
Polishing Wheels & Disks				
Garnet & cuttle	i	b	b	p-discard
Rag	p	b	a	
Rubber	a	b	b	
Prostheses, Removable	b	b	b	
Rubber Dam Equipment				
Carbon steel clamps	b	p	p	
Metal frames	p	p	p	
Plastic frames	b	b	b	
Punches	b	p	p	
Stainless steel clamps	p	p	p	
Rubber Items				
Prophylaxis cups	b	b	b	**p-discard
Saliva Ejectors (Plastic)	b	b	b	**p-discard
Stones				
Diamond	a	p	p	
Polishing	p	a	p	
Sharpening	p	p	p	
Surgical Instruments				
Stainless steel	p	p	p	
Ultrasonic Scaling Tips	a	i	i	
Water-air Syringe Tips	p	p	p	**p-discard
X-ray Equipment				
Plastic film holders	**p	i	**a	
Collimating devices	b	i	i	

p-Preferred method a-Acceptable method b-Effective, but risk of damage to materials
i-Ineffective method *-Carbon steel (autoclave w/ chemical protection -2% sodium nitrite)
**-A variety of alloys and materials in these products, confirmation with the equipment manufacturers is recommended, especially for handpieces and their attachments.

REGULATED WASTE

OSHA defines regulated waste as liquid or semiliquid blood or saliva; contaminated items that would release blood or saliva as liquid or semiliquid if compressed; and items that are caked with dried blood or saliva and capable of releasing these materials during handling and sharps capable of causing injury during handling. Regulated waste must be placed in a closable, leak proof on the bottom and the sides, and opened using a foot pedal. The container can be lined with a red biohazard bag or at minimum display the biohazard symbol on the front. These items must be kept separate from other waste. Designated personnel will remove regulated waste to a holding area.

The current interpretation is blood-soaked expendable supplies and injury causing sharps should be considered and managed as Regulated Medical Waste. Other waste from a dental procedure should be considered normal refuge. Therefore, only blood soaked expendables and sharps need to be considered and treated as regulated. The following operatory waste, e.g. disposable towels, gowns, unsaturated blood stained disposables, gauze, cotton, etc. are not considered to be regulated medical waste, provided that the patient is not on any isolation precautions to protect others from highly communicable disease:

Body fluids are regulated. However fluids may be disposed of in a sanitary sewer system followed by a copious flush. Used suture & anesthetic needles, scalpel blades, disposable sharp instruments, broken instruments, used burs, files, reamers, broaches, used anesthetic cartridges and other items that could scrape or puncture skin must be disposed of in puncture resistant sharps container. All sharps containers must be color-coded, puncture resistant, and closed when 3/4 full container. The infection control officer will arrange for containers to be picked up by a certified hauler who will provide a manifest that the office must keep on file.

BIOPSY SPECIMENS & EXTRACTED TEETH

Biopsy specimens and extracted teeth are potentially infectious because they contain blood. Standard Precautions must be employed whenever biopsy specimens or extracted teeth are handled.

Extracted teeth used in the education of DHCWs must be considered infectious and are classified as clinical specimens. All persons who collect, transport, or manipulate extracted teeth must use Standard Precautions. Extracted teeth should be immersed in a fresh solution of chemical germicide (dilute household bleach, or buffered formalin) suitable for fixation. Extracted teeth containing amalgam restorations must be managed utilizing mercury hygiene practices including collection and storage for amalgam recycling. Extracted teeth with amalgam restorations should never be autoclaved.

Miscellaneous Information

- No food or drink is allowed in a treatment room.
- Waste containers in the treatment rooms must have a biohazardous label and be cleaned with soap and water on a regular basis
- Oxygen and nitrous tanks, if used, must be secured to a wall
- An inventory list with SDSs must be on file and available to all employees

Sample SOP

Pre-treatment Procedures
Remove unnecessary equipment, materials and supplies from the operatory, turn on view box and position radiographs with clean hands, then perform a hand wash and don gloves. Clean, disinfect, and flush water lines. Deglove, wash, and place barriers with clean hands. Set up instruments, gather materials, supplies, equipment and medicaments with overgloves. Wash hands

Treatment Procedures
Seat patient, place bib, safety glasses, review and update medical history; if patient chart will be required place it in a folder that can be disinfected. Or position chart in a visible inaccessible location. Complete any remaining operatory preparation adjust chair, operator stool, light, bracket table, etc. Wash hands and place gown, mask, and eyewear. Wash hands, don gloves, complete procedure, avoid touching untreated surfaces e.g. drawers, cabinets, switches, control knobs, etc.

What if you did not get everything you need, or didn't plan ahead?
Use over glove or have an assistant retrieve the item. If no one is available, unglove, wash or sanitize hands, retrieve item(s), wash hands, reglove for procedure.

Post Treatment Procedures
Immediately after patient discharge, the operatory, instruments, equipment, supplies and patient care items must be pre-cleaned and terminally disinfected or sterilized. Remove procedure gloves, wash hands, and don gloves collect contaminated instruments, clean and place instruments in cassette for transportation, flush water lines, dispose of contaminated waste, clean and disinfect equipment and surfaces.

Waterline Recommendations (Minimize Biofilm Formation)
Dental unit waterline contamination concern is related to possible infection with pathogens such as Pseudomonads, Legionellae etc. The infection control protocols should achieve < 500 colony forming units (cfu)/mL of heterotrophes (potable water). In general, untreated or unfiltered dental unit water is unlikely to meet drinking water standards. Although flushing is ineffective in the absence of other water treatment methods, flushing all lines for 30 seconds at the beginning of the day, between patients, and at the end of each day is still recommended. The use of sterile water is mandatory for all surgical procedures.

Methods that may be employed to improve Dental Unit Water Quality include:

- Independent water reservoir system (allows daily draining and air purging if indicated and allows application of periodic and/or use of continuous chemical germicides)
- Water purification cartridges/systems
- Sterile water delivery systems for surgeries and immunocompromised patients
- Filtration
- Combination of Methods

Water testing should be performed and recorded on a quarterly basis. Kits are available so staff can conduct the testing.

CHECK LIST: Does your infection control program address the following areas of practice?

- Immunization Policies
- Use of PPE: masks, gowns, protective eyewear, and gloves
- Handwashing, use of sanitizer, and care of hands
- Packaging of instruments for sterilization
- Sterilization of instruments
- Use of protective barriers
- Use of disposables
- Disinfection of surfaces
- Proper handling of sharps
- Use of rubber dams
- Disinfection of air/water syringes
- Proper handling and disinfection of impressions
- Care, use and disinfection of ultrasonic scalers
- Operatory cleanup before and after patient treatment
- Cleanup and disinfection of lab counters, trays and other areas
- Care, use and disinfection of x-ray equipment, film or sensors
- Sterilization/disposal of burs
- Disinfection of prosthetic devices and orthodontic retainers
- Disinfection of pumice pan, rag wheel and brushes
- Limiting contamination of charts, telephones, clinical cameras, pens, etc.

Establish and maintain medical records for employees. Records to include: (This is done for all employees with potential occupational exposure.)

- HBV vaccination history, titer, or refusal to be vaccinated
- Signed declination form for employees declining vaccination
- Personal Health History including name and Social Security number
- Medical records to be maintained for duration of employment plus 30 years.

Post Exposure Plan
If an exposure occurs, follow up must be provided at no cost to the employee, at a reasonable time and place, and performed by or under the supervision of a licensed physician.

Globally Harmonized System of Classification (GHS)

GHS is a system of classification and labeling of chemicals. The GHS is a system for standardizing and harmonizing the classification and labeling of chemicals. It is a logical and comprehensive approach to:

.

- Defining health, physical and environmental hazards of chemicals;
- Creating classification process that use available data on chemicals for comparison with the defined hazard criteria;
-
- Communicating hazard information, as well as protective measures, on labels and Safety Data Sheets (SDS).

- Comply with two laws - OSHA's Hazard Communication Standard & NYS Right-to-Know Law
- Where an employee can find information about the hazards of chemicals so that they can protect themselves from the effects of overexposure (Physical hazards Health Hazards)
- New look to labels - pictograms on labels.
- More standardized Safety Data Sheets.
- Better "Safety Data Sheet" information.
- Signal Word – e.g. "Danger" or "Warning"

Hazards are communicated by way of:

1) Labels
2) Safety Data Sheets

Sample Label

Product Identifier
CODE _____
Product Name _____

Supplier Identification
Company Name_____
Street Address _____
City _____ State _____
Postal Code _____ Country _____
Emergency Phone Number _____

Precautionary Statements
Keep container tightly closed. Store in cool, well ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measure against static discharge. Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear Protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon dioxide (CO_2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

Hazard Pictograms

Signal Word
Danger

Hazard Statement
Highly flammable liquid and vapor.
May cause liver and kidney damage.

Supplemental Information
Directions for use
_____
_____
_____
Fill weight: _____ Lot Number:_____
Gross weight: _____ Fill Date: _____
Expiration Date: _____

Managing Dental Mercury
6 NYCRR Part 374-4 Express Terms
Information on 6 NYCRR Part 374-4 Regulations
NY Dental Mercury & Amalgam Recycling Law
Recycling of Mercury By Dentists FAQ
Guide for Dentists for Managing Mercury and Amalgam Wastes
List of Mercury and Dental Amalgam Recyclers & Hazardous Waste Haulers
List of Amalgam Separator Manufacturers
Community Household Hazardous Waste Programs That Accept Mercury From Dentists

Home » Chemical and Pollution Control » Mercury » Managing Dental Mercury

Managing Dental Mercury

Effective March 16, 2003, New York State Law requires that all dentists recycle mercury and mercury amalgam waste generated in their practices. The law also requires that dentists use encapsulated mercury and prohibits, in the practice of dentistry, the use or possession of elemental mercury not in capsules. Effective May 12, 2006, dental facilities are required to install amalgam separators that remove waste amalgam from the dental facilities' wastewater.

A list of amalgam separator manufacturers is available. This is an informational list and is not endorsed by the Department. Specific regulatory requirements are provided under Subpart 374-4 (link leaves DEC). Multiple questions dental facilities may have concerning the installation of amalgam separators are also addressed.

Elemental Mercury (also referred to as free, bulk, or raw mercury)

New York State Law forbids the use or possession of elemental mercury in the practice of dentistry. Amalgam capsules must be used.

In the event that elemental mercury is present in your dental office:

- Recycle all elemental mercury. Many hazardous waste haulers and dental amalgam recyclers will accept elemental mercury for recycling.
- **Never** rinse elemental mercury down the drain.
- **Never** dispose of elemental mercury in the trash.
- **Never** dispose of elemental mercury in the sharps container or as medical waste.
- If only a small amount of elemental mercury is to be recycled, it may be possible to initiate a reaction with an amalgam alloy to form scrap amalgam, which must then be recycled through your amalgam recycler.

Some solid waste planning units (such as in Erie, Monroe, Otsego, Rockland, Oneida-Herkimer and Cayuga Counties) offer elemental mercury recycling programs, which allow dentists to safely manage their elemental mercury. Some will charge a fee for this service. Call your local solid waste district to inquire about such programs. A list of New York State recycling coordinators.

If you are concerned about the possible uncontained presence of mercury in your dental office due to historical or recent mercury spills, equipment is available for the detection of mercury vapor and mercury spill locations in the workplace environment. This equipment can be rented from rental test equipment companies.

Amalgam Capsules

New York State Law requires that all amalgam capsule waste be recycled.

If your dental practice continues to utilize dental amalgam, New York State Law requires the use of single-use amalgam capsules. This minimizes the chance of accidental mercury spills.

Minimize the generation of amalgam waste. Don't mix a double-use capsule if a single-use capsule will do. Less waste means less amalgam that needs to be recycled.

In the event of a mercury spill, put on disposable nitrile gloves and immediately clean up the spill utilizing a mercury spill kit. Do not use latex gloves as mercury can penetrate latex. Mercury spill kits are available from a number of sources including: companies that specialize in Occupational Safety and Health Administration (OSHA) compliance supplies and equipment; amalgam recyclers; and dental product suppliers. Before purchasing a kit, make sure it comes with complete instructions on how to perform a spill clean up. Train several staff members in proper spill clean up procedures.

Dental Amalgam

- **Never** put scrap amalgam in the sharps container.
- **Never** put scrap amalgam in the red biohazard bag.
- **Never** discard scrap amalgam in the trash.
- **Never** rinse scrap amalgam down the drain.
- **Never** remove excess amalgam from the amalgam well with the high-speed suction vacuum line.

Important Links

Doing Our Part Amalgam Poster (pdf, 275kb)

PDF Help

For help with PDFs on this page, please call 518-402-8706.

Contact for this Page

NYSDEC
Division of Materials Management
Bureau of Waste Reduction & Recycling
625 Broadway
Albany, NY 12233-7253
518-402-8706
Send us an email

This Page Covers

SEPSIS AWARENESS AND EDUCATION

LEARNING OBJECTIVES : At the conclusion of training on this element, the learner will be able to:

- Describe the scope of the sepsis problem and the NYS Sepsis Improvement Initiative;
- Recognize the signs and symptoms of sepsis to identify and treat at-risk patients, both adult and pediatric, as early as possible;
- Understand the need for rapid evaluation and management in adults and children if sepsis is suspected;
- Identify common sources of sepsis;
- Educate patients and families on methods for preventing infections and illnesses that can lead to sepsis and on identifying the signs and symptoms of severe infections and when to seek care.

DEFINITION: Sepsis: the body's extreme response to an infection.

CONTENT OUTLINE

I. Sepsis-scope of the problem

a. Sepsis is a life-threatening medical emergency that requires early recognition and intervention.
b. Sepsis prevalence and mortality U.S., NYS

II. New York State Sepsis Improvement Initiative and Rory Staunton's Law

a. Purpose

1. Early recognition of sepsis is the responsibility of all healthcare providers.
2. Most sepsis cases are community-acquired
3. 7 in 10 patients with sepsis had recently used healthcare services or had chronic conditions requiring frequent medical care.
    a. Public Health Law § 239-a
    b. Education Law § 6505-b

b. Hospital regulations

Rory's Regulations: 10 NYCRR 405.2 and 405.4 were implemented in 2013, and they require hospitals in New York State to adopt evidence-based protocols to ensure early diagnosis and treatment of sepsis.

III. Causes of Sepsis

a. Development of sepsis following infection
   i. Any infection can trigger sepsis
   ii. There are populations at increased risk of developing sepsis: extreme age. chronic conditions, immunosuppressed
   iii. Sites and sources of infections commonly associated with sepsis include lung, urinary tract, skin, and gut

IV. Early Recognition of Sepsis

a. Manifestations of sepsis may be subtle and vary by types of infections and populations
b. Signs and symptoms that may be associated with sepsis in persons with confirmed or suspected infection can include:
   i. Altered mental state, shortness of breath, fever, clammy or sweaty skin, extreme pain or discomfort, high heart rate
   ii. Signs and symptoms in children and the elderly
   iii. Severe forms of sepsis including septic shock

V. Principles of Sepsis Treatment

a. Prompt diagnosis and treatment are critical for optimal outcomes; there is increased morbidity/mortality with delayed recognition and response
b. Recommended diagnostic modalities include blood cultures and other testing to identify source and site of infection and organ dysfunction.
c. Recommended treatment of sepsis includes administration of appropriate intravenous (IV) antimicrobial therapy, with source identification and de-escalation of antibiotics as soon as feasible

VI. Patient Education and Prevention

a. Preventing infection: hand hygiene, wound care, and vaccination
b. Risk factors (High-risk patients)
c. Warning signs and symptoms of sepsis
d. Seeking immediate care for worsening infection and signs and symptoms of sepsis
e. Giving relevant history and information to clinicians

Selected Internet Resources	
Dental Infection Control	
ADA Dental Infection Control Issues:	www.ada.org/prof/resources/topics/icontrol/index.asp
Centers for Disease Control and Prevention: Dental Infection Control	www.cdc.gov/OralHealth/infectioncontrol/index.htm
Occupational Safety and Health Administration (OSHA)	www.osha.gov
OSHA Dental Safety and Health Topics	www.osha.gov/SLTC/dentistry/index.html
Organization for Safety and Asepsis Procedures (OSAP)	www.osap.org/
USAF Dental Evaluation and Consultation Service (DECS)	https://decs.nhgl.med.navy.mil
General Infection Control	
Centers for Disease Control and Prevention (CDC)	www.cdc.gov/
Division of Healthcare Quality Promotion	www.cdc.gov/ncidod/dhqp/index.html
Guidelines and Recommendations	www.cdc.gov/ncidod/dhqp/guidelines.html
National Immunization Program	www.cdc.gov/vaccines/
National Institute for Occupational Safety and Health (NIOSH)	www.cdc.gov/niosh/homepage.html
NIOSH: Bloodborne Infectious Diseases	www.cdc.gov/niosh/topics/bbp/
Divisions of HIV/AIDS Prevention	www.cdc.gov/hiv
Tuberculosis Elimination	www.cdc.gov/tb/
Joint Commission for the Accreditation of Healthcare Organizations	www.jcaho.org/
World Health Organization (WHO)	www.who.int/en/
Regulatory	
Environmental Protection Agency	www.epa.gov
Food and Drug Administration	www.fda.gov/
Center for Devices and Radiological Health	www.fda.gov/cdrh/index.html
Other	
HIV Dent	www.hivdent.org
National Institutes of Health (NIH)	www.nih.gov/
NIOSH: Latex Allergies	www.cdc.gov/niosh/topics/latex/
National Library of Medicine (NLM)	www.nlm.nih.gov/
PubMed	www.ncbi.nlm.nih.gov/entrez/query.fcgi

Sample Declination Form for hepatitis B vaccination

I was provided with materials that explained the benefit of receiving the hepatitis B vaccination but I choose to decline vaccination at this time.

I understand that as a DHCW, I may be at risk of acquiring the Hepatitis B virus (HBV) during my daily occupational exposure to blood and other potentially infectious materials during patient care.

I also understand that I may choose to change my mind at a later date and if I do so my employer is still responsible for paying for the vaccination.

I decline the 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 that could have a detrimental effect on my liver and quality of health. In the event of an accidental exposure in the workplace, I will report the incident immediately to the Infection Control officer and will follow the office's post exposure protocols.

_____ _____

Employee Signature/Date Employer's Signature / Date

Sample Documentation for Biological Testing

	Date/Time Vial placed in incubator	Initials of Person Testing	Date/Time Results were read	Person Reading Results	Results
Autoclave #1					+ -
Autoclave #2					+ -
Control					+ -

Sample Documentation for Weekly Flushing of Eyewash Station: flush for a minimum of **3 minutes**. If office was closed for vacation, flush longer to remove stagnant water. Clean covers with a soap and hot water solution before activating eyewash station. Both covers should pop off when eyewash station is activated.

Date	**Both Covers Present and Cleaned**	**Minutes Flushed**	**Employee Who Completed Cleaning of Covers and Flushing**

Template for Monthly Testing of Effectiveness of Ultrasonic Unit: place **heavy duty** foil vertically in the unit and run unit for 1 minute. (running the unit longer will pulverize foil and clog the filter).

Test Date	Test Results: determined by distribution of even dimples on the aluminum foil	Employee Testing	Date sent for Repair	Date Returned And Retested
	Even Missing/Uneven			
	Even Missing/Uneven			