Infection Control Standards for VA Dental Clinics

21 October 2013

Revision History Log

Date of Revision	Description	Authors and Reviewers
10/2/2017 3/08/2017 1/12/2017 2/17/2016 10/27/2015 9/11/2015	Page 4: Introduction Page 16: Clean/Sterile Instrument Storage Page 18: Dental Supplies Page 19: Burs, Drills, Posts, Implant Comp. Page 20: Diamond Coated Instrument Page 20: Endodontic Files, Reamers, etc Page 21: Dental Shade Guides Page 21: High Voumne Evacuation (HVE) Page 23: Devices on the Air/Water Lines. Page 19: Burs, Drills, Posts, Implant Comp. Page 37: Ultrasonic Denture Cleaning Equipment section. Page 40: Service and Companion Animals section.	Office of Dentistry (OoD) Patricia E. Arola, DDS, MHA, FAGD, FACHE Susan C. Bestgen, DDS Gregory M. Smith, DDS Michael A. Joseph, DDS, MSD Scott A. Trapp, DDS, MBA, MPH
	IMPORTANT: Click here to see MORE revisions	

CONTENTS

Introduction

VA Dentistry held its first infection control seminar, chaired by former Chief of the San Diego Dental Service, Dr. George Carroll, in Los Angeles, California. A task force, led by Dr. Carroll, published the first VA Dental Services monograph on the topic, *Infection Control,* in 1987. Several revisions to this VA dental monograph have been published over the years. OSHA issued its 1991 Bloodborne Pathogens Standard (29 CFR Part 1910.1030) and its current standard precautions (formerly universal precautions) recommendations. The CDC published *Guidelines for Infection Control in Dental Health-Care Settings – 2003,* which serves as a comprehensive and important guideline. VA's reusable medical equipment directives, VHA Directive 2009-004, *Use and Reprocessing of Reusable Medical Equipment (RME) in Veterans Health Administration Facilities,* and VHA Directive 2009-031, *Improving Safety in the Use of Reusable Medical Equipment through Standardization of Organizational Structure and Reprocessing Requirements,* require medical/dental RME be reprocessed according to the manufacturer's instructions, and places many RME responsibilities under the Chief, SPS. The RME Directives further require all personnel involved in RME reprocessing be trained, with documentation of initial training, proficiency and annual competency. A basic tenet of infection control is that, other factors being equal, single patient-use, disposable products are preferable to reusable medical equipment.

The primary goal of any infection control program is to protect patients, health care workers and their families from transmissible diseases. Standard precautions, the foundation of infection control, means all patients are treated as if they have a transmissible bloodborne pathogen. Bloodborne pathogen Infection control protocols are defined by the patient's procedure, not by the patient's diagnosis.

Practitioners are reminded that, although HIV may have provided the impetus for today's infection control practices, there are other bloodborne pathogens more prevalent and more readily transmitted than HIV. Fortunately a vaccine exists for hepatitis B (HBV), and health care workers are encouraged to be vaccinated. Hepatitis C (HCV) is another concern, and at publication, a vaccine unfortunately does not exist. An important component of each VA facility's Exposure Control Plan is prompt post-exposure referral to Employee Health Services for evaluation and recommendations.

The following is adapted from prior VA Dentistry *Infection Control* monographs, and continues to be true today:
Limitations to achieving an ideal infection control program include ingrained habits, dental clinic space, and fiscal and staffing resources. Facility and equipment design as well as available

services and supplies within each clinic may also create problems. Concern has been continually expressed by dental health care workers that the pressure to be productive precludes implementing extensive infection control programs because the time taken to accomplish these procedures would seriously diminish treatment time. Our answer to these concerns is that infection control procedures must be properly performed, and therefore, allotted adequate time. The safety of patients and dental health care providers must have priority over all other considerations.

Authors:

Bradley M. Kasson, DDS
Infection Control Consultant, VA Office of Dentistry
Chief, Dental Service
Fargo VA Health Care System
Fargo, North Dakota

Michael A. Joseph, DDS, MSD
Infection Control Consultant, VA Office of Dentistry
Chief, Dental Service
Huntington VA Medical Center
Huntington, West Virginia

Scott Trapp, DDS, MBA, MPH
Infection Control Consultant, VA Office of Dentistry
Chief, Dental Service
St. Louis VA Health Care System
St. Louis, Missouri

Assistant Under Secretary for Health for Dentistry:

Patricia E. Arola, DDS, MHA, FAGD, FACHE
Department of Veterans Affairs
Washington, District of Columbia

Acknowledgement:

Thank you to those involved with the five versions of *Infection Control for VA Dental Services*. These five versions served as the groundwork for this current document. Thanks to John B. Tullner, DDS; George W. Carroll, DDS; Shannon E. Mills, DDS; Robert J. Whitacre, DDS, MS; Gayle W. DeBoom, DDS, Terry G. O'Toole, DDS, and Gregory G. Zeller, DDS, MS.

Thank you also to Dr. Susan Bestgen, Director of Operations and Dr. Gregory Smith from the VACO Office of Dentistry and to Ms. Teresa Wells, Director, Ms. Rosie Fardo, Deputy Director, and Ms. Sherri Bull, Health System Specialist, VA National Program Office for Sterile Processing.

Dental Infection Control Policy:

VA Dental Clinics differ from each other: a single VA dental infection control policy that fits all dental clinics is not realistic. Therefore each dental facility needs to create its own policy, based upon VA standards, including the standards in this document.

Local VA hospitals have addressed infection control and the OSHA Bloodborne Pathogens Standards in multiple local policies. Some ideas to consider:
VA Dental Services, when writing dental infection control policies, may wish to reference existing hospital policies rather than rewrite them in the dental infection control policy. The dental infection control document might use hyperlinks to existing hospital policies, such as Hand Hygiene, Exposure Control Plan, Vaccinations (including hepatitis B), Management of Environment Equipment and Supplies, Standard and Transmission Based Precautions, Biological Implants, Medication Management and Exposure Management, among others. Such linked references will keep the dental infection control policy current as the linked polices are updated. The dental policy can then address only items not specifically addressed in existing hospital policies. The dental infection control policy should be approved by the local Infection Control Committee.

Dental Services are advised that a process to evaluate engineered devices, as per the Needlestick Safety and Prevention Act, should be included in the infection control policy. This evaluation system seeks input from front-line providers regarding the efficacy and safety of such devices. A sample CDC evaluation form is included as part of the attached *Sample Infection Control Document*. (Attachment 4)

The USAF Dental Evaluation & Consultation Service (DECS) website routinely evaluates products, including infection control products and engineered safety devices. Evaluators are encouraged to review this resource for additional product information.
http://www.afms.af.mil/decs/

Empowerment:

Dental Services are strongly encouraged to develop an empowered staff, such that any member of the dental team can and should challenge and correct any other member, without fear of intimidation or retaliation, when infection control breaches are noted. Although the dental service chief is ultimately responsible, maintaining proper infection control involves all team members working together. Each team member is expected to accept comments professionally and courteously.

Occupational Exposures:

Any dental staff member sustaining a percutaneous exposure, mucous membrane or eye exposure must report the injury to the supervisor and follow the post-exposure policy outlined in the local Exposure Control Plan. This should include seeking immediate consultation with Employee Health Services for examination and recommendations. Documentation of the

incident in the employee's health record is required. The ASISTS electronic documentation program is used to complete forms, such as 2162, *Report of Accident*, and Form CA-1, *Department of Labor Federal Employees Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation*.

Clinical Application of Infection Control

VA is required to follow manufacturer's reprocessing instructions. Some manufacturers have published instructions not compatible with VA protocol. For example, many dental equipment manufacturers have published instructions based upon desk-top gravity displacement autoclaves. These autoclaves are not used in VA, nor are they planned to be used. When selecting equipment and instruments, it is important to follow local protocol for RME purchase approval. Part of the approval process will be for SPS to evaluate reprocessing instructions. If the reprocessing instructions are found incompatible with VA requirements, the facility will avoid spending money on equipment it can't use.

Dental clinics are encouraged, as much as possible, to gain consensus on equipment, instruments and supply inventories. Reduced inventories of similar equipment, instruments and supplies helps reduce costs, complexity, and the potential for errors.

Instrument (RME) Classification:

The Spaulding Classification System is widely recognized as a means to evaluate instrument reprocessing protocol. Although not every instrument fits neatly into one category, in general this classification serves as an excellent tool.

- **Critical:** Instruments which penetrate soft tissue or bone
  - Reprocessing: heat sterilization
- **Semi-Critical:** Instruments which touch mucous membranes or non-intact skin
  - Reprocessing: if heat tolerant, heat sterilization. If not heat tolerant, high level disinfection. (High level disinfectants should not to be performed in the dental service.)
- **Non-Critical:** Instruments which contact intact skin
  - Reprocessing: disinfection. An EPA-registered hospital disinfectant (low level disinfectant) is the minimum standard. If the instrument is visibly contaminated with blood or other potentially infectious material (OPIM), an EPA-registered hospital disinfectant with a tuberculocidal claim (intermediate level disinfectant) is to be used. Dental Services are encouraged to default to an intermediate level disinfectant for use throughout the clinic, as the presence of blood or OPIM is likely. Any disinfectants used in the dental clinic should have local Infection Control Committee approval.

We are fortunate to practice in an environment surrounded with professional support staff. VA dental personnel can devote their time to clinical duties, while Sterile Processing Service (SPS) attends to reprocessing our semi-critical and critical devices. For contaminated instruments reprocessed by SPS, dental personnel's responsibilities are to remove gross bioburden and to deliver the instruments to the SPS pick-up location. Ideally that location is a Soiled Utility Room. That room is to have a Biohazard label at the entrance. Similarly, the instrument transport containers, used to get instruments from the dental service to SPS, are to be closable and are to have Biohazard labels.

Dental Services are advised to work closely with local SPS regarding contaminated instrument storage. If a soiled utility room is not available for the dental service, SPS will advise regarding other closed systems for contaminated instruments, such as a closed cart system.

Immunizations:

Practitioners are referred to local policy and Employee Health Services for information regarding immunizations, including the hepatitis B vaccination.

Hand Hygiene:

Practitioners are referred to VHA Directive 2011-007, *Required Hand Hygiene Practices* and to local policy regarding hand hygiene products and protocol. In general, alcohol hand rubs are an excellent choice when no soil is visible on the hands or when *Clostridium difficile* is not suspected. Soap and water are recommended if visible soil is present, or if *Clostridium difficile* is suspected. Hand hygiene should be accomplished immediately before donning gloves and again immediately after removing gloves. Hand hygiene should also be accomplished if changing gloves is needed mid-procedure. Hand hygiene should be accomplished before handling medication, before inserting or handling any invasive device for patient care (whether or not gloves are used), and after contact with inanimate surfaces and objects (including medical equipment) in the immediate vicinity of the patient. All health care workers who provide direct, hands-on care to patients should not wear artificial fingernails or extenders. Fingernails should be short and clean. Jewelry, if not prohibited by local policy, should not interfere with glove use. Nail polish is discouraged as chips can lead to bacterial harbors.

The hand rub dispenser should be in the dental operatory, readily accessible to staff.

Personal hand care products (lotions, hand rubs, etc.) should not be brought to the dental clinic. Appropriate hand care products should be provided by the hospital after approval of the appropriate committee(s), such as Commodities and Infection Control.

Work Area

The use and wear of personal protective equipment is defined in the OSHA Bloodborne Pathogens Standard under 1910.1030(d)(3). This Standard further defines that all personal protective equipment shall be removed prior to leaving the work area. OSHA defines the term "work area" as the area where work involving exposure or potential exposure to blood or other potentially infectious materials exists, along with the potential contamination of surfaces. This definition may vary depending upon local dental service design. The dental service work area shall be defined locally to delineate the boundaries where a potential risk of occupational exposure exists. These boundaries define the work area and when personal protective equipment is to be removed in accordance with the OSHA Bloodborne Pathogens Standard 1910.1030(d)(3)(vii). It shall be the responsibility of the Chief of the Dental Service to define the clinical and administrative "work areas" in consultation with VISN Lead Dentist, local environment health, infection prevention specialist and sterile processing service. The Association for the Advancement of Medical Instrumentation (AAMI) ANSI/AAMI Standard ST79 notes that work areas should be posted as restricted-access (including, but not limited to, access only to authorized personnel) because of the presence of infectious materials.

As noted in OSHA's explanation of the final rule: it should also be understood that the decision not to use personal protective equipment is to be made on a case-by-case basis and in no way is to be generally applied to a particular work area or recurring task. Employees must exercise their professional judgment in making such a decision and should be aware that they may be asked to explain the reasons for their course of action. For example, OSHA believes that disregarding the use of personal protective equipment because there is concern that the appropriate personal protective equipment may be alarming to the patient or because the patient population is perceived to be "low risk" are not legitimate reasons.

Eating, Applying Make-Up, Handling Contact Lenses:

Food and drink are prohibited in areas where there is potential for occupational exposure to blood or saliva (i.e., clinical areas), radiography rooms, dental laboratories, and where clean medical/dental supplies and instruments are present. Ideally a VA Dental Clinic is arranged so that administrative space is clearly separate from clinical space.

Refrigerated food must be in separate refrigerators from refrigerated medications and medical/dental supplies, and not in areas described under no food or drink above.

Make-up is not to be applied and contact lenses are not to be handled in the same areas defined for no eating or drinking.

The Operatory:

The dental operatory should present a neat, uncluttered appearance. Everything within a 3-6 foot radius of the patient's face, when spatter/spray is being generated, will potentially become contaminated. This zone should have nothing within it not needed for the procedure, and nothing that can't be disinfected, discarded or readily cleaned. Dental supplies and equipment which are not needed for the procedure should be put in closed drawers or cabinets or be covered to protect from spatter, etc.

Operatory Upholstery:

Manufacturers upholster patient operatory chairs and staff operatory stools with various materials. Cloth upholstery is not appropriate, as it cannot be effectively cleaned. Leather upholstery may have cleaning instructions prohibiting disinfectants. Pleated or seamed upholstery can make cleaning difficult. Smooth upholstery which can be disinfected is preferable. If so desired by the dental service, manufacturers may be able to provide replacement upholstery for existing chairs.

Left: Leather, seamed upholstery. Disinfectant not recommended per manufacturer.

Right: Vinyl, smooth upholstery. Disinfectant recommended by manufacturer.

Operatory Set-Up:

In the operating room, a circulating nurse is available to provide needed supplies to the scrubbed team. Dental services with a float assistant can emulate the operating room model. This model is important for VA Dental Services – a "circulating" or float assistant who can retrieve additional needed items mid-procedure.

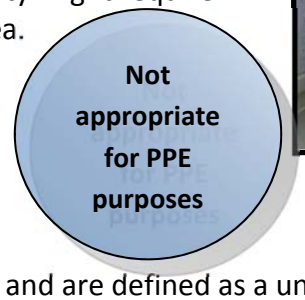
Room set-up requires careful thought regarding what will be needed. When the procedure has begun, retrieving additional items will require careful consideration regarding infection control. Items in drawers can't properly be removed with contaminated gloves. The assistant may wish to have additional gloves, such as food handler gloves, available to temporarily don over the contaminated gloves while retrieving items. Another option is to include an instrument for retrieval purposes in the set-up, such as a cotton forceps. The cotton forceps can be placed on a countertop away from the other instruments, keeping the working end clean while using it for

retrieval. And, as mentioned in the previous paragraph, a circulating assistant is the best option.

Clinical Attire:

Personal Protective Equipment (PPE) is required for clinical procedures when exposure to blood or other potentially infectious material (OPIM) is likely to occur. PPE is addressed in following paragraphs. Any PPE requiring laundry services is the employer's responsibility – employees are not to launder PPE. The level of PPE required is dependent upon the procedure. For example, performing an oral examination does not require the same level of PPE as does an extraction. In the examination scenario, gloves, and perhaps mask and eyewear may suffice. Any procedure involving spray, splash and/or spatter requires gown, mask, gloves and eyewear.

Doctor "white lab coats" are not appropriate for PPE usage, as they are not fluid resistant and the wrist area does not close tightly. Your facility might require wearing such a coat over scrubs when leaving the clinical area.



Scrubs:

Scrubs are an excellent option for clinical personnel to wear, and are defined as a uniform, not as PPE. Generally the local facility will provide scrubs for employees. If permitted locally, employees may also purchase, wear and launder their own scrubs.

Protective Personal Equipment (PPE):

OSHA states that PPE must not allow blood or saliva to pass through to clothing, skin, or mucous membranes. Each dental service chief should assure that staff is consistent regarding selection of PPE for any give procedure.

Dental personnel are referred to the local facility's policies regarding PPE, usually found in a Standard and Transmission Based Precautions document. Gloves and masks should not leave the dental treatment room. Depending upon local policy, the clinic layout and the procedure performed, a clean PPE gown might be permitted to be worn to another room. Although the CDC, in *Guidelines for Infection Control in Dental Health-Care Settings – 2003,* has defined "visible soil" as the standard to change gowns, using a high-speed handpiece with water coolant or using an ultrasonic scaler generates contaminated spatter that is not readily visible. Therefore performing such procedures would dictate the gown not be used for treating another patient, and that it be discarded (disposable gowns) or laundered (cloth gowns) after use on that patient. However, if only an examination is performed while wearing the gown, and the gown isn't otherwise contaminated, it should be permissible to wear that gown to another treatment room.

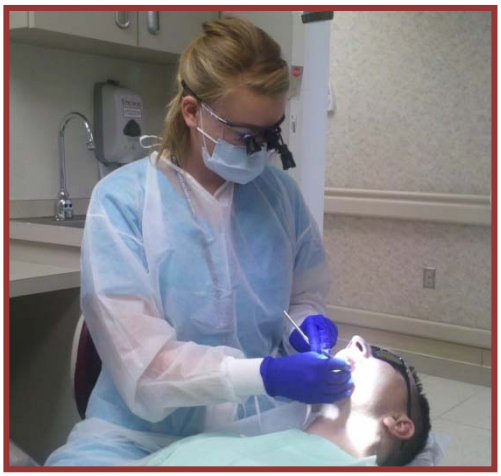
The clinic layout will impact a decision regarding gowns. For example, it would not be appropriate to wear a gown, even a clean gown, through a waiting room. Each facility should define a line beyond which PPE is not worn. Clinical PPE should not be worn into the dental lab, or into non-clinical areas such as private offices, the waiting room, scheduling office, break room, etc. Ideally the VA Dental Clinic can be configured so that clinical areas are separate from administrative areas.

The dental laboratory section of this document addresses non-clinical PPE in the dental laboratory.

Gowns:

Standards related to gowns are thoroughly defined by ANSI/AAMI PB70:2012 Liquid barrier performance and classification of protective apparel and drapes intended for use in health care facilities and AAMI Technical Information Report AAMI TIR11:205 Selection and use of protective apparel and surgical drapes in health care facilities. Based upon these standards facilities should begin to ensure that gowns minimally conform to a ANSI/AAMI PB70 barrier performance level 1. If the facility provides reusable gowns these gowns should comply with ANSI/AAMI ST65 Processing of reusable Surgical textiles for use in health care facilities include methods for tracking the number of uses and reprocessing requirements. If dental services find the laundry service does not track the number of uses, then it is recommended to start exploring other options such as the exclusive use of disposable gowns.

Gowns are to be fluid resistant and extend from the base of the neck to below the knees. They are to be long sleeved with a secure fit at the wrists. Gloves are to cover the wrist area such that there is no exposed skin between the gloves and the gown. To comply with covering the base of the neck, front closure gowns should be closed to the neck. Disposable gowns are a viable option. Gowns should be replaced immediately if penetrated by blood or other potentially infectious material.



front
sable
deally
ave no
ets.

Front entry disposable gown

Gloves:

Gloves must always be worn when touching blood, saliva, or mucous membranes, and when touching blood-soiled items, body fluids or secretions, as well as surfaces contaminated with them. "If it's wet, don't touch it with your bare hands" serves as a useful guide. Change gloves immediately, with appropriate hand hygiene, if a glove becomes compromised during patient care.

Sterile gloves are to be worn by the surgical team for surgical procedures.

Hand hygiene is to be accomplished before donning gloves and immediately after removing gloves.

Clinical patient care gloves are not to be washed.

Heavy utility gloves may be worn for room cleaning and disinfection. These gloves may be disinfected and reused. These gloves are not to be used in direct patient care.

Double Gloving:

No studies to date indicate double gloving will impact the likelihood of seroconversion in the event of an exposure incident. However, there is less likelihood the operator will have contaminants on his/her hands at the completion of a procedure. If double gloving is elected, that decision should be based upon the procedure and the likelihood of glove tearing or perforation, rather than by the patient's diagnosis. Wearing different colored gloves for each layer will help identify when the outer glove has been breached.

Eyewear:

Protective eyewear must include lateral protection, such as side shields, and should be worn for any procedure likely to generate spray, spatter or splash, or if there is a risk of foreign bodies contacting the operator's eyes. Eyewear should be cleaned between patients as instructed by the eyewear manufacturer.

Patients should be given protective eyewear to use during procedures. Reusable patient eyewear should be disinfected between patients. Disposable, single patient-use eyewear for patients may be another option.

Masks:

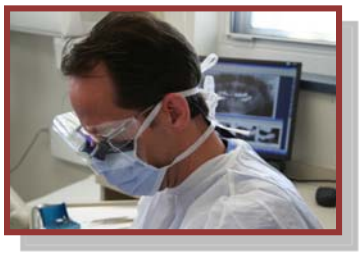
Masks should be worn for any procedure likely to generate spray, spatter or splash. A face shield, while protecting the eyes, needs to be supplemented with a mask when spray, spatter or splash are generated, such as with a handpiece or ultrasonic scaler.

Masks are to be changed between patients. Masks are not to be worn outside the dental operatory.

Exception: See section on transporting contaminated instruments to the soiled area. It may be permissible under local policy to wear the mask to the soiled area.

It is inappropriate to have a mask, even a clean mask, dangling from the neck while outside the dental operatory.

Masks should be changed when wet. Consideration should be given to changing the mask after one hour usage, if practicable to do so.



Masks with attached plastic shields are an excellent choice, providing mask and eyewear PPE in one device.

Practitioners are referred to local policy regarding use of high filtration masks while attending to airborne precaution patients, such as patients with active tuberculosis. These masks must be fit tested and are reserved for special precaution situations. Dental care for patients with active tuberculosis is recommended to be limited to emergent care only. After the patient initiates antibiotic therapy, infectious disease can determine when the transmission risk has been managed.

Shoes, Hair Covers and Shoe Covers:

Practitioners are referred to local policy regarding shoes and wearing hair and shoe covers. Safety dictates that employees wear clinical shoes that protect the foot from falling sharps. Clinical shoes should therefore not have open toes or other openings through which falling sharps could readily enter or through which fluids could readily contact skin. Staff may opt to keep dedicated clinic shoes in the facility.

PPE Usage	Gloves	Mask	Eyewear or Face Shield	Gown	Hair & Shoe Covers
No reasonable expectation of splash, spray or spatter e.g., examination, removable prosthodontics	Required	Optional, with greater consideration when using rotary instrument	Required if using rotary instrument	Optional	Optional
Reasonable expectation of splash, spray or spatter	Required	Required	Required	Required	Optional

e.g., operative, fixed prosthodontics, endodontia, prophy					
Surgical procedures	Sterile	Required	Required	Required	Optional
Room clean-up/disinfection (wearing gloves, mask, eyewear and gown is a safe option)	Required (Utility gloves optional)	Recommended: Required with spray Manufacturer may require for non-spray	Required	Recommended: Manufacturer may require	Optional

Disinfectants:

CDC Term	EPA Term	FDA Term
Low Level	Hospital Disinfectant	
Intermediate Level	Hospital Disinfectant with Tuberculocidal Claim	
Sterilant/High Level		Sterilant/High Level

Disinfectants are commonly referred to by the CDC terminology: low, intermediate, or high level. High level disinfectants are sterilants, and are not indicated for use within dental clinics. Any use of high level disinfectants is relegated to SPS. Intermediate level disinfectants (tuberculocidal claim) are recommended for dental clinic usage. There is no single disinfectant product that meets the needs for every situation, and dental clinics, in conjunction with local infection control and commodities committees, will determine which product(s) suit the need. No matter which disinfectant products are selected, it is important that dental personnel understand the manufacturer's instructions, including how to clean visible bioburden prior to disinfection, and contact time. Contact time refers to wet contact with the disinfectant. Disinfectants are entering the market with shorter contact times than earlier products, which increases compliance and maximizes efficiency. The disinfectant label will advise regarding what PPE is recommended during use: dental personnel should minimally don gloves and eyewear, and wear a mask if the disinfectant is sprayed. Full PPE (gowns, gloves, masks and eyewear) is encouraged.

Dental services are encouraged to use disinfectants pre-mixed (ready to use) from the manufacturer. These products will be labeled with expiration dates, instructions for use, including contact time and cleaning instructions, and the organisms against which the product is effective. If mixing disinfectants on station, the label should minimally include this information.

Dental Services are encouraged to use disinfectants that are cleaner/disinfectants. These products may be used to first clean an area of visible bioburden, then can be applied again as a disinfectant.

Timers should be used to determine the manufacturer's recommended disinfectant contact time has elapsed.

Clean/Sterile Instrument Storage:

Event-related Shelf Life for RME

Shelf life of packaged sterile instruments should be considered event-related. There is a moderate level of evidence that shows an event must occur to compromise package sterility. Events include multiple instances of handling that leads to a loss of package integrity, moisture penetration or exposure to airborne contaminants. Based upon published evidence the CDC Guideline for Infection Control in Dental Health Care Settings, the Association of perioperative Registered Nurses (AORN) Guidelines for Perioperative Practice and ANSI/AAMI ST79 Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities recommend that the shelf life of packaged sterile items should be considered event-related.

Storage of sterilized reusable medical equipment (RME) is based upon the Association for the Advancement of Medical Instrumentation (AAMI) standard ANSI/AAMI ST79 Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities and implemented in the VA through VHA Directive 1116(2) Sterile Processing Service March 23, 2016. ANSI/AAMI ST79 requires that RME is to be stored in a controlled environment that includes temperature, humidity monitoring along with air exchange requirements. VHA Directive 1116(2) defines the storage of RME in the dental service as satellite storage. “Satellite storage is a dedicated storage room for clean or sterile supplies. Satellite storage areas often include storage of critical and semi-critical RME. Areas such as exam room cabinets, crash carts, patient room supply cabinets (including point-of-use cabinets not located in a dedicated storage area), and nurse servers are not considered satellite storage unless in these areas items are stored for greater than 72 hours.” Ideally the dental service will have a centrally located room for sterile and clean instrument storage. Facilities are encouraged to pursue a central location in the dental clinic. Among the reasons for a centrally located storage area are, 1) inventory control, so that sterile items may be rotated (first in, first out) and, 2) temperature and humidity monitoring.

ANSI/AAMI ST79 and VHA Directive 1116(2) define the standards and the process for handling sterile but unused RME after removal from the dental service controlled environment satellite storage area. ANSI/AAMI ST79 states that unused items that previously have been packaged, sterilized, and issued to a controlled environment may be returned to the sterile storage area if the integrity of the packaging has not been compromised and there is no evidence of contamination; such items should be the first to be dispensed when needed. This will require that the area to which the RME is issued such as the dental treatment room be a controlled environment that meets the ANSI/AAMI ST79 standard if it is stored in the area for more than

72 hours as defined in the VHA Directive 1116(2). Local facilities should work with the RME and Infection Control Committees along with subject matter experts from SPS and dental service to develop local SOPs based upon the limitations and resources of the local facility to minimally meet these requirements.

If the RME is issued to an uncontrolled environment where temperature and humidity are not monitored the items are not to be returned to clean storage. The RME can be kept in the uncontrolled environment for up to 72 hours and at that time must be sent for reprocessing if not sooner.

Your local Infection Control Committee, RME Committee and SPS will be the resource for your facility's requirements. Should these monitors be out of range, local policy will dictate procedure to follow.

Although event related sterility is now standard VA SPS practice, sterile packs should be rotated on a first in, first out basis. A common practice is to store SPS's sterile items bookcase style. Dental staff draws from the right side of the stack – newly reprocessed packs are placed on the left side. (*Note: the laminated shelving in the image is not the SPS preferred shelving material*.)

Many prepackaged sterile expendables have manufacturer indicated expiration dates which must be followed.

Dental Supplies

Various dental supplies used intraorally are packaged in a variety of methods. Some are provided in individual, single-use, presterilized packages such as dental burs and others are provided in bulk packaging such as matrix bands. It is recommended that the manufacturer's instructions for use be reviewed prior to placing dental supplies into service to evaluate if disinfection or sterilization instructions are provided. Particular attention should be placed upon the language used by the manufacturer to see if disinfection or sterilization is required, recommended or optional.

When the manufacturer requires or recommends specific disinfection or sterilization for single patient use dental supplies, VA Dental Services should implement such processes in collaboration with SPS. In the event that disinfection or sterilization is optional for single patient use dental supplies a local decision should be reached in collaboration with inflection control and SPS based upon a risk assessment and resources.

Storing Equipment and Supplies Not Ready for Patient Use

Inventories of equipment/items/supplies not ready to use on patients need to be stored separate from equipment/items/supplies ready for patient use. The equipment/items/supplies not ready for patient use are not to be stored in operatories. For example, inventories of non-sterile intra-oral cutting burs and non-sterile endodontic files are not to be stored in operatories. If such items/supplies are stored in the dental clinic, they must be stored in a manner that clearly demarcates them from sterile items/supplies. Some facility SPS departments have the capability to store these non-sterile inventories in SPS. This is a local decision.

Setting Up for Treatment: Clean vs. Sterile

General dentistry procedures are not sterile procedures. Critical and semi-critical instruments are sterilized according to manufacturer's recommendations primarily to prevent cross contamination between patients. The patient must be treated with clean, appropriately reprocessed instruments. The intent, however, is not necessarily to introduce sterile instruments to the oral cavity – a significant difference from oral surgery. In general dentistry it is acceptable, while setting up, to touch the sterile pack's instruments with clean hands or clean gloves (do not need sterile gloves), understanding during the procedure many non-sterile items will be added – restorative materials, impression materials, etc. Contaminated instruments, of course, must be handled with gloved hands.

The intent with oral surgery is, as much as possible, to use sterile instruments on the patient. During instrument set-up, sterilized instruments should not be handled until sterile gloves have been donned. Room set-up also requires careful planning to prevent contacting non-sterile items after donning sterile gloves. For example, sterile 4x4 gauze may be used to adjust the light handle, being sure to keep the now non-sterile gauze off the sterile field after use. It is understood that oral surgery protocol will be the most careful we can perform, but will not duplicate sterile operating room conditions. Referencing the surgical wound classification system, even under the best of circumstances, oral surgery procedures are clean contaminated, which is defined as a non-traumatic surgical wound with minor break in sterile technique. The reader is referred (see *Website References* section of this monograph) to the Surgical Wound Classification chart for further information regarding this classification system.

Burs, Drills, Posts, Implant Components: (References to burs applies to drills in this document)

Although some burs are marketed as multi-use, thoroughly cleaning them has been documented to be very difficult. Burs routinely come back from reprocessing with visible debris. Studies have been published calling for consideration of using single-use, sterile burs. In VA, all intra-oral burs are single patient-use, and intra-oral cutting burs (carbide burs, diamonds, for example) are to be sterile prior to use. Many manufacturers provide single use burs in sterile packaging. The option of single patient use, pre-sterilized burs is highly encouraged. Intra-oral cutting burs provided in non-sterile condition from the manufacturer are

to be sterilized prior to use, according to the manufacturer's recommendations. A bur not marketed as single patient use may be reprocessed as long as the manufacturer states the bur can be reprocessed and the bur hasn't been used intra-orally. Once used intra-orally, all burs must be disposed.

Commonly used symbol for single use item

Non-carbide, non-diamond intra-oral polishing burs (rubber impregnated polishers, disposable polishing discs, for examples) do not need to be sterile prior to use unless so stated by the manufacturer, as a polishing bur is not a cutting instrument. The polishing bur, after intra-oral use, is to be discarded as a single patient-use bur. A polishing bur used extra-orally may be reprocessed if the manufacturer provides instructions.

Note: Multi-fluted finishing burs and finishing diamonds are to be sterile prior to use.

Implant drills are single patient-use drills, and are to be sterile prior to use.

Pin and post drills are single patient-use drills. Drills are to be sterile prior to use.

Pins, posts, and implant components such as abutments are to be sterile if so stated by the manufacturer.

Extra-oral clinical burs do not contact tissue. These extra-oral clinical burs, such as denture adjusting burs and polishing burs used chair side, shall be reprocessed according to CDC Guidelines by sterilization. Reprocessing and sterilization shall be completed according to the manufacturer's instructions after each patient use.

Diamond Coated Instrument: (diamond burs addressed in preceding paragraph)

Instruments with diamond coating, such as ultrasonic scaler tips, piezoelectric surgical tips and endodontic tips, present an evolving infection control topic. Some manufacturers of diamond coated instruments (Synthes, Piezosurgery®) state their diamond coated tips are to be sterile prior to use and they are single patient use – not to be reprocessed. Other manufacturers indicate their diamond coated tips can be reprocessed.

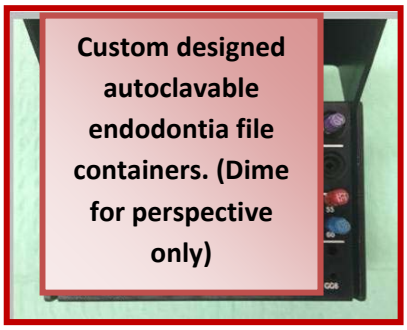
From Synthes, Inc. (orthopedic surgery equipment manufacturer):
"Warning
– Diamond burrs and cutting tools made of hard metal (carbide) cannot be reprocessed since diamond burrs cannot be cleaned properly, and the latter can break if used several times. They must therefore be discarded after each use."
From Piezoelectric®:
"WARNING Diamond coated inserts are SINGLE PATIENT USE ONLY. The diamond coated inserts are intended to be used on an individual patient during a single surgical procedure and then discarded. The diamond coated inserts must be sterilized only one time, prior to first use."

Due to the above concerns, SPS will not reprocess diamond coated instruments, including diamond coated ultrasonic scaler inserts. These devices, if used, are to be sterile prior to use, single patient-use, disposable items.

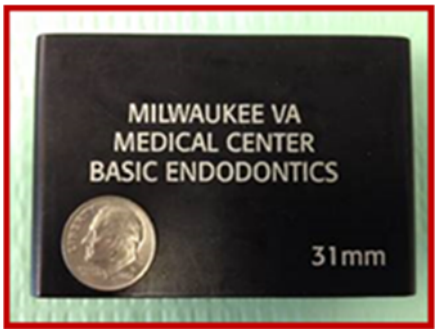
Note: Diamond burs are covered in the **Burs, Drills, Posts, Implant Components** *section of this document.*

Endodontic Files, Reamers, etc.

Endodontic files, reamers, broaches, and Gates-Glidden burs are to be sterile prior to use, preferably pre-sterilized from the manufacturer. They are single patient-use devices if contaminated during the procedure. These items may be reprocessed if, 1) they are not deemed single use by the manufacturer, and 2) they did not become contaminated during the procedure. Contamination occurs anytime the devices are used intra-orally, touched by contaminated gloves, or exposed to spray, spatter, or splash.



Custom designed autoclavable endodontia file containers. (Dime for perspective only)



The "Bead Sterilizer" is not an acceptable device for VA Dentistry application.

Dental Shade Guides

The Spaulding Classification places instruments into three categories based upon the usage and contact with the body according to the level of risk as previously mentioned within this standard. Certain items such as shade guides may be classified based upon use.

For example if the shade guide is used intraorally and may come in contact with mucosal tissues the item would be classified as semicritical and will require sterilization. If sterilization instructions are not available it is recommended to barrier protect the shade guide if used intraorally then disinfect.

If the shade guide is used extraorally to compare the shade guide to a crown received from the dental lab, then shade guide would be classified as noncritical and may be reprocessed by disinfection with the hospital approved intermediate level disinfectant.

High Volume Evacuation (HVE) and Saliva Ejector (SE) Valves:

In many aspects the HVE and SE valves are considered non-critical items. However, there are some difficulties with this definition as pertains to these valves:

- Disinfection only addresses the valve exterior. Without disassembly, the lumen and internal valve components are not addressed.
    - No other VA RME is permitted to be considered "reprocessed" and maintain a contaminated lumen
- At publication, at least two valve manufacturers, via their reprocessing instructions, give no other option than autoclaving
- If the valve leaks, such as via O-ring failure, contaminants could contact the operator's gloves.
    - Contaminants could readily then contact the patient's oral cavity, and require patient notification of an exposure incident.
    - A failing O-ring would not be evident without valve disassembly

For the above reasons, these valves do not fit neatly into the non-critical Spaulding Classification definition.

It is imperative that Veterans Health Administration decontamination and sterilization procedures ensure Veteran safety without compromising processing efficiency. After reviewing various manufacturer instructions, Centers for Disease Control and Association for the Advancement of Medical Instrumentation Standards, and consultation with the VHA National Infectious Diseases Service, VA Dentistry and SPS recommends adherence to the below reprocessing procedure to minimize the potential risk of cross contamination and occupational exposure to bloodborne pathogens.

- Per manufacturer's instructions, it is acceptable to clean the dental evacuation valve 0-rings in place. The SPS staff will continue to disassemble HVE/SVE instruments, but may leave the 0-rings in place.
- The instruments are to be placed in the thermal washer disinfector and subsequently sterilized according to instructions for use.
- Both Dental Service and SPS staff are to inspect the 0-rings for signs of damage including but not limited to cuts, flat spots, and nicks on the surface.
- If a damaged 0-ring is detected, then it should be replaced by the end user per local policy.
- 0-ring replacement may be accomplished through a work order for Biomedical Engineering, use of an outside contracted vendor, or be performed by, trained dental service staff. SPS staff will not remove or replace the o-rings.

The intent is to terminally sterilize valves between patients, and not necessarily to present a sterile valve to the next patient. For reusable dental evacuation instruments:

- **Dental Service** shall apply enzymatic and send evacuation instruments to SPS after each patient use
- **SPS** will disassemble, clean, and decontaminate the evacuation instruments
- **SPS** will sterilize the evacuation instruments in an un-assembled state with the O-rings in place in sterile packaging and then send to the Dental Service
- **Dental Service** will reassemble the sterilized evacuation instruments prior to use

At time of publication, at least one manufacturer plans to bring to market single patient-use, disposable HVE and SE valves. Facilities are encouraged to weigh the cost of single patient-use, disposable valves vs. the costs involved with reprocessing reusable valves. No recommendation is made by the consultants regarding which valve to use.

Clean (i.e., terminally sterilized) valves may be placed on the unit after the room has been cleaned. It is not necessary to wait until the next patient is seated to place these valves.

Devices on the Air/Water Lines:

CDC states (*Guidelines for Infection Control in Dental Health-Care Settings – 2003),* "For processing any dental device that can be removed from the dental unit air or waterlines, neither surface disinfection nor immersion in chemical germicides is an acceptable method." The CDC further specifies (Summary of Infection Prevention Practices in Dental Settings – 2016), "Dental handpieces and associated attachments, including low-speed motors and reusable prophylaxis angles, should always be heat sterilized between patients and not high-level or surface disinfected."

All types of dental handpieces and associated attachments including motors and reusable prophylaxis angles where the manufacturer instructions do not recommend heat sterilization will not be used, as it is a requirement that they be sterilized after each patient use.

Air-water syringes also fit into this category, but do not withstand heat reprocessing. Air-water syringes may be barrier protected and disinfected in the dental clinic.

Some motors require an adaptive connector between the hose and the motor. The connector may be considered part of the hose and therefore disinfected, remaining attached to the hose.

Treatment Room Preparation:

Sterile instrument packs are ideally opened in the patient's presence, in part to engender confidence in infection control protocols. If sterile packs are opened before the patient is in the room, the sterile packs should not be left unsecure. For example, sterile packs should not be opened prior to lunch, in anticipation of the after-lunch planned procedure.

Barriers are an effective means to minimize contamination of non-critical items and work surfaces, such as light handles. If the barrier has been breached, disinfection must follow barrier removal.

Digital Radiograph Sensors, Intra-Oral Cameras, Electronic Periodontal Probes, Occlusal Analyzers, and Lasers:
As semi-critical devices, ideally these electronic devices should be heat sterilized or subjected to high level disinfection. However, most of these electronic devices are not able to be reprocessed by these methods. Per CDC, semi-critical items that cannot be reprocessed by heat sterilization or high-level disinfection should, at a minimum, be barrier protected by using an FDA-cleared barrier. CDC reports digital radiography sensor plastic barriers have a failure rate of 44%. Per CDC, after barrier removal, sensors are to be cleaned and disinfected with an intermediate level disinfectant.

Labeling Medicaments, Solutions on the Field:

All medicaments, solutions, etc. for use during patient care needs to be labeled, whether on or off the clean/sterile field. Examples include irrigating solutions, etchant and astringents. Two person verification of the label is indicated unless a single health-care worker is preparing both the secondary dispensing package and will also be administering. Secondary containers are not to be pre-labeled – i.e., the secondary container should be labeled at the time of medicament transfer. Dental services are advised to check with their local medication management policy.

Disposable Items:

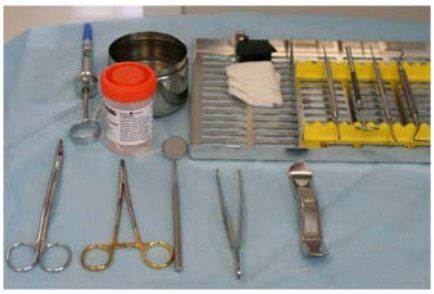
Other factors being equal, disposable items are preferred over RME. The market has multiple items available for single patient use and disposable – alginate bowls, patient napkins and holders, temporary cement packets, etchant dispensers, surgical scalpel handles with attached sheathed blades, for examples – and we can anticipate more options in the future. Dental Services are encouraged to explore such options.

Oral Surgical Procedures:

Per the ADA and CDC, surgical procedures are those involving the incision, excision, or reflection of tissue that exposes normally sterile areas of the oral cavity, such as:

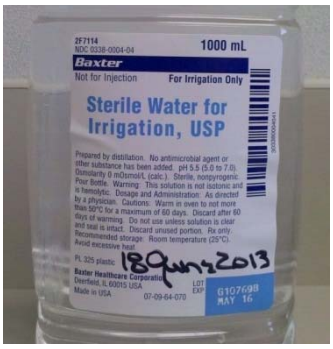
- biopsy
- periodontal surgery
- apical surgery
- implant surgery
- surgical extraction of teeth (flap elevation, bone removal or tooth sectioning)

The ADA and CDC state that sterile irrigation is to be used during these procedures, and is the standard for VA oral surgery procedures. A typical dental unit is not able to deliver sterile irrigants through its reservoir system. Sterile irrigant delivery can be accomplished by dripping sterile irrigant from a sterile syringe, such as a bulb syringe, onto the surgical site. At time of publication at least one manufacturer offers an equipment system that delivers sterile irrigants via sterile reservoir and sterile lines through the sterile handpiece. At least one manufacturer offers a device to deliver sterile irrigants via a handheld device (not the surgical handpiece) to



the surgical site. The Monject™ curved tip syringe, at time of publication, does not come in sterile condition. Therefore it is not appropriate to deliver surgical irrigation.

A bottle of sterile saline or sterile water, once opened, can be used for other patients for the remainder of the workday, provided the bottle's lip hasn't been contaminated. To maintain lip sterility, it cannot touch any surface. Liquid must be poured with physical separation from the receiving container. The opened bottle is to be labeled with the date opened. This labeling requirement should not be confused with the Joint Commission Standard that injectable, reusable medications, once opened, are to have a 28 day expiration date written on the bottle. Such multi-dose vials are to be discarded 28 days after first use unless the manufacturer specifies otherwise (shorter or longer).



Sterile surgical gloves should be worn for surgical procedures. Every attempt should be made to minimize contacting anything other than the sterile instruments and the patient. For example, sterile 4x4 gauze may be used to adjust the light. The gauze, now no longer sterile, should not be placed in the sterile field.

Incorrect: Biopsy specimen bottle has contaminated surgical field.

Incorrect: Glove has contaminated the biopsy specimen bottle's exterior.

For biopsy procedures the specimen bottle should be opened during set-up preparations. The bottle should not be placed in the sterile field. After securing the specimen, it can be

immediately transferred to the open specimen bottle. After the procedure and prior to discharging the patient, the bottle can be closed with clean hands and the bottle labeled.

Non-amalgam containing extracted teeth should be placed in a biohazard waste labeled container

- Your local facility might accept using the sharps container for extracted teeth
- Refer to the section *Waste Amalgam/Extracted Teeth; Precious Metal Recovery* for information regarding extracted teeth containing amalgam

Implant Tracking: Non-Biological Implants

Non-biological implants for use in dentistry, such as titanium implants, include items ordered through the prosthetic service that are intended to stay in the oral cavity and be covered with tissue. The process will typically involve the dentist placing a CPRS consult to the prosthetics service to order the correct implant using the Prosthetic Request/Device Menu.

- Immediately before use, the dentist should perform a final inspection of the product to insure that it is sterile and ready for use
  - An implant tracking method needs to be in place, in part to be able to notify patients should an implant recall occur
  - Tracking is to include lot numbers, serial numbers, and expiration dates as they apply
  - Include any information regarding devices that were wasted or contaminated during the procedure
  - Some dental services have found a CPRS Prosthetics consult provides a tracking system
  - Many dental services have also found it useful to enter the implant data into an electronic dental implant log located on the dental service specific drive, or report the data to a facility implant coordinator for tracking purposes
- VHA Directive 2009-062, Management of Non-Biological Implantable Devices should be referenced for additional information. (see *Website References*)

Biological Implants-Tissue Program:

Dental services are advised to refer to any local policies on biological implants and/or tissue program for additional information. Biological implants used in the dental service typically include allograft and xenograft bone derived from human and animal origin respectively, as well as collagen membranes. Many facilities have determined that tissue products will be stored in a central facility location to monitor the temperature and humidity -- commonly the facility blood bank. Dental Services must have a biological implant tracking system in place in case of a recall.

- Immediately prior to use, the dentist should perform a final inspection of the product to insure that it is sterile and ready for use.

IMPLANT CATEGORIES

Biological Implants	Non-Biological Implants	Not Implants
Bone grafts from human or animal origin	(Titanium) implant bodies	Dental restorations
Membranes from human or animal origin	Cover screws	Pins
	Synthetic bone grafts	Posts
	Synthetic membranes	Implant abutments

How Do All Personnel Know It's Clean/Sterile?

There have been cases of dental personnel inadvertently using dental instruments that didn't go through sterilization.

The instruments were wrapped for sterilization, but never entered the autoclave. Although dental personnel are supposed to check the physical monitors (external tape and internal chemical monitor), it isn't difficult to imagine overlooking these monitors. One means to help personnel verify sterility is for the assistant to leave the internal monitor in plain view, so the dentist, upon entering the room, can see the monitor. After cleaning a treatment room, some indicator of cleaning is helpful to prevent a patient being seated in an unclean room. Among ideas to demonstrate the room is ready…place a clean, folded patient napkin on the patient chair.

Waterlines:

The Environmental Protection Agency (EPA), American Public Health Association and the American Water Works Association have defined the standard for US potable water – not to exceed 500 colony forming units (cfu) per milliliter of water. The Centers for Disease Control and Prevention (CDC) and the American Dental Association (ADA) have recommended dental unit water line (DUWL) deliver water should meet the U.S. potable water standard – not to exceed 500 cfu/ml of water. Dental services should routinely test water coming out of the

DUWLs to meet this standard, have an action plan to meet this standard and to address a DUWL that exceeds this standard.

Waterline testing is preferred to be accomplished by a laboratory certified (EPA or state) to perform environmental testing. VA Microbiology Laboratories perform clinical tests, and have not been approved for environmental testing.

The following is the recommended waterline protocol for VA Dental Services:

1. Dental unit water lines (DUWL) must be accessible for treatment – daily and for shocking, as needed. That requires a water bottle (reservoir) on the unit or some means to access the DUWLs.
    a. Replace/change any units with direct connection to municipal water.
2. For new dental equipment with or attached to dental unit waterlines such as a new dental chair or Cavitron; this equipment shall be treated and tested prior patient use.
3. Provide an ongoing water treatment program. There are multiple choices. Among the most common are those that involve placing a tablet in the reservoir and those that have a reservoir draw-tube which treats the water.

Testing protocol

a. Test each line separately
b. Remove all handpieces and any other equipment reprocessed by SPS before drawing samples from the lines. Air-water syringe tips should be removed. The air-water syringe itself, if not changed between patients (e.g., if barrier + disinfection is accomplished by dental personnel), should remain on the line while drawing the sample.
c. Quarterly
d. Use of a water testing lab certified in environmental specimens is preferred
e. Report results to the Infection Control Committee or the Safety Committee as appropriate for the facility.

Action Levels

f. If >200 cfu but <500 cfu
    i. Shock all lines in the unit (i.e., the dental treatment room)
        1. Leave the air-water syringe on the line if not reprocessed by SPS
    ii. Line can stay in service
    iii. No retest needed after shocking
        1. Maintain the unit's place in the quarterly testing sequence
g. If >500 cfu
    i. Take line out of service (the >500 cfu line only – other sub-500 cfu lines may stay in service)
    ii. Shock all lines to unit per manufacturer's instructions
        1. Leave the air-water syringe on the line if not reprocessed by SPS

iii. Retest the >500 cfu line before returning it to service

h. If shocking and retesting again yields >500 cfu
   i. Line remains out of service
   ii. Contact dental equipment manufacturer and waterline treatment manufacturer for recommendations on options, such as repeat shocking or line replacement

Feed Water (water supplied to the reservoir)

i. Generally tap, distilled, de-ionized or sterile water is acceptable (see manufacturer's recommendations). Also, at least one manufacturer has a sequential cartridge system which produces treated water for the reservoir. *Note: All recent Legionella occurrences in VA have involved municipal water. There is no advantage to filling dental unit reservoirs with sterile water. Typical dental units are not designed to deliver sterile water, and therefore this does not meet sterile water surgery requirements. Sterile water in reservoirs does not prevent biofilm formation in DUWLs.*

Sterile saline or sterile water for surgical procedures

Note: Placing sterile saline/water in a dental unit reservoir does not constitute sterile irrigation at the surgery site

j. Surgical procedures are those involving the incision, excision, or reflection of tissue that exposes normally sterile areas of the oral cavity, such as:
   i. biopsy
   ii. periodontal surgery
   iii. apical surgery
   iv. implant surgery
   v. surgical extraction of teeth (flap elevation, bone removal or tooth sectioning)

At time of publication at least one manufacturer offers an equipment system that delivers sterile irrigants via sterile reservoir and sterile lines through the sterile handpiece. At least one manufacturer offers a device to deliver sterile irrigants via an assistant handheld device to the surgical site. These systems do not require waterline testing, as sterile irrigant is used in a sterile system.

At the end of the work week, the water reservoir may be removed and drained, allowing the reservoir to dry over the weekend.

- Tablet treatments added to the reservoir have expiration timeframes after mixing, commonly 2-4 weeks, depending upon the manufacturer. Emptying the reservoir weekly ensures no solution becomes expired.
  - If tablet system reservoirs are not emptied weekly, the dental service will need to identify how tablet expiration is monitored. An expiration label on the reservoir is one example.

- If using a draw-tube system, water may not be effectively treated until it is drawn into the tube. (Checking with the draw-tube manufacturer is recommended.) Allowing the reservoir to dry reduces the risk of biofilm forming in the reservoir.

Testing each individual waterline separately (as opposed to combining all the unit's lines into one sample) is for the following reasons:

- If a line exceeds 500 cfu, only that line needs to be taken out of service until shocked and retested. The remainder of the unit's lines may well be functional during the shocking process.
    - Often it's the least used line that forms biofilm
- Combining lines into one sample adds a dilution factor. For example, assuming equal amounts of water from 5 lines, a report of 100 cfu needs to assume a worst case scenario – that 1 line was 500, and the other 4 were zero (the 1:4 dilution factor). The entire unit needs to be taken out of service until shocked and retested.

Ideally personnel other than dental personnel will accomplish waterline testing. This is a local, resource dependent decision. Drawing waterline samples and submission of the samples for testing requires a competency document be accomplished, with associated annual validation. Test results, actions and outcomes should be reported to the local Infection Control Committee.

Rationale:

There are viable alternatives to cancelling patients if the dental unit waterline test results are over 500 cfu/ml. The dental chairs and units do not need to be taken out of service, only the specific dental unit waterlines that test over 500 cfu/ml. Procedures that do not utilize water such as denture adjustments may still be scheduled for these operatories. For procedures that do require irrigation such as restorative surgery, the assistant can provide by using sterile water through a syringe. The hygienists can perform cleanings using hand instruments. This will help prevent problems with continuity of care. The dental infection control consultants can also be contacted to listen to the problem, and help offer solutions. The DUWL should not be reused until test results show that the lines are under 500 cfu/ml.

Anesthetic Carpule Disposal:

Disposal of anesthetic carpules should involve local decisions from infection control and pharmacy. OSHA's opinion:

- Pharmaceutical containers, including anesthetics carpules used in dentistry, are generally not considered to be contaminated sharps unless they are broken and can penetrate the skin. Intact anesthetic carpules are not required by OSHA to be discarded in a sharps container. Intact carpules without blood can be treated as medical waste.
- The bloodborne pathogens standard defines regulated waste as liquid or semi-liquid blood or other potentially infectious material (OPIM); contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed; items that are caked with dried blood or OPIM and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or OPIM. Dental anesthetic carpules are not usually expected to become contaminated with blood.

However, when there is visible blood inside the carpules, they are to be regarded as regulated (biohazardous) waste. OSHA requires such contaminated carpules be placed in containers that are closable, constructed to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping, and color-coded or labeled appropriately and closed prior to removal [29 CFR 1910.1030(d)(4)(iii)(B)]. If contaminated carpules are broken, the sharps container requirements of 29 CFR 1910.1030(d)(4)(iii)(A) would apply to the disposal of any contaminated carpules.

The ultimate disposal of pharmaceutical vials must be in accordance with municipal, state and federal regulations (e.g., those of the Environmental Protection Agency, EPA). OSHA does not regulate the disposal of medical wastes which are not "regulated waste" within the meaning of the bloodborne pathogens standard. Product material safety data sheets may provide guidance on proper disposal of anesthetic carpules.

At publication, the most common methods of carpule disposal in VA Dental Services are:

- Place all carpules in a sharps biohazardous waste container (same container as for other contaminated dental sharps)
- Place all carpules in a pharmaceutical waste container (dedicated to drug disposal). Your pharmacy and infection control committee may, for example, recommend using a black box with a hazardous label.
- A combination of the above, depending upon whether blood is visible in the carpule.

See attached *Sample Know Where to Throw* document.

Contaminated Instrument Transport to SPS's Soiled Instrument Pick-Up Location:

The process for transporting contaminated instruments to the soiled instrument pick-up location is defined locally by the Chief of the Dental Service in consultation with local infection prevention specialists, environmental health specialist and local SPS.
In accordance with American Association of Medical Instrumentation ANSI/AAMI ST79:2010/A4:2013 Standard. Contaminated instruments should not to be stored in the treatment room, even if the instruments are in an enclosed container. If contaminated instruments are stored temporarily in the treatment room, they must be segregated from the clean/sterile items in order to prevent cross contamination or recontamination. This standard recognizes that in existing facilities, it might not be feasible to fully comply with the recommendations for physical separation of functional work areas; however, compliance is practical and desirable during new construction and major modifications. Interim measures that allow for functional separation (e.g., through airflow patterns or separation of activities) should be considered until such time as physical separation can be achieved. If such modification is necessary contaminated instruments may be stored temporarily in the treatment room. The contaminated instruments must be segregated from the clean/sterile items in order to prevent cross contamination or recontamination. Additionally, this modification and justification shall be incorporated into the Dental Service infection prevention documentation.

Regardless of the contaminated instrument storage system, instruments need to be transported to the soiled area via a defined process. This process is a local decision, involving input from infection prevention, environmental health and SPS's input. Some facilities are using biohazard labeled plastic tubs, which hold the cassette and assorted instruments. Some facilities are using rigid metal containers. These metal containers serve as sterilization containers, not needing any additional external wrap, and also serve to transfer contaminated instruments back to SPS. The hospital's operating room likely uses these containers. Each of these above two systems requires storage planning, as the containers are somewhat bulky. The process for using either of these systems should maintain a clean container exterior – the container's exterior should not be handled with contaminated gloves.

With rigid plastic containers two options are available:

1. Dental Service has a supply of rigid plastic containers with snap-on lids, loads contaminated instruments into a container, transports and leaves the containerin the soiled area for SPS pick-up. Enzymatic foam or gel is applied to the instruments in the container by Dental staff.
2. Dental Service has a single container in each operatory. The container is used to transport instruments to the soiled utility area, at which point the contents of the container are transferred to the SPS soiled instrument bin. Enzymatic foam or gel is applied by Dental staff either at the time instruments are placed in the container or after transfer to the secondary SPS bin. The application of the enzymatic solution process is completed within the dental operatory or in the soiled utility room, dependent upon local facility and SPS recommendations/policy.
    a. The container requires disinfection before returning it back to the dental operatory.

One transport container may be used per operatory to take instruments from the operatory to the soiled utility room/dirty area. These containers must be easily accessible to personnel and located as close as feasibly possible to the immediate area where sharps (instruments) are used or can be reasonably anticipated to be found. Loose instruments that are not in a cassette should be placed directly into the transport container or may be placed in a clear plastic bag then placed in the rigid transport container. The use of these plastic bags however is not necessary and is a local decision.

A local decision will determine whether it's acceptable to wear a contaminated gown to transport instruments to the soiled instrument pick-up area. In the above example, using an enzymatic will involve wearing a gown, and the gown from the operatory could suffice. Proximity of the operatory to the soiled instrument pick-up area will be a factor in that decision. Ideally, transport to the soiled instrument pick-up area should not go through uncontrolled areas – that is, areas where the general public can enter unescorted.

The outside of the transport bin should not be soiled. While wearing appropriate PPE the biohazard transport bin can then be opened and instruments moved to the large biohazard bin. The empty transport bin must be low to intermediate-level disinfected, such as with a disinfectant wipe. If necessary, the outside can be wiped with a disinfectant wipe as well. The bin can then be taken back to the operatory for re-use. The bin can sit on a cabinet or shelf, but should be labeled as biohazard. Use of any non-rigid containers, including blue wrap or Humipak is unacceptable for transport.

Additional information concerning the OSHA Bloodborn Pathogens Standard can be found by accessing the link below.
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10051

Waste Amalgam/Extracted Teeth; Precious Metal Recovery

The local GEMS Coordinator or Industrial Hygienist is a suggested point of contact regarding recycling amalgam, including extracted teeth with amalgam, radiography lead foil and film silver recovery. The *Website References* section of this monograph includes website addresses for the VA Precious Metals Recovery Program. Attached is Memorandum 796-13-02, March 15, 2013: *Guidance for Recycling of S-ray Film and Precious Metals.* Hines serves as the VA collection point, and Hines forwards these items to a recycler.

Hines will accept all forms of scrap amalgam in a common container. Extracted teeth (after disinfection with a non-bleach disinfectant, followed by air drying), amalgam traps, amalgam capsules and loose scrap amalgam may all be combined in the same container. The container should be sealed. No type of solutions such as a water, disinfectant or formaldehyde, should be in the container. The container should have a snap or screw closure for a tight seal.

Giving extracted teeth to patients has been a controversial topic. It is not official VA policy *not* to give patients their extracted teeth if requested by the patient. And with teeth containing precious metals, the patient should be offered the metal. Staff should not attempt to separate the precious metal from the extracted teeth, due to time and risk of injury. Better to give the entire tooth to the patient.

With inpatients, extracted teeth should not be given to the patient until ready for discharge. Hold the teeth in the dental service or some other secure location until discharge.

Providers are held to OSHA regulations regarding the Bloodborne Pathogen Standard. Patients are not held to that standard. For extracted teeth leaving with the patient, disinfect the teeth after removing as much soft tissue as can reasonably be accomplished (certainly remove periapical lesions, etc.). Sending the teeth out the door in disinfectant could have undesired consequences. Disinfectants have PPE requirements and are, by nature, toxic chemicals. A patient could potentially get injured (e.g., splash in the eye). Place the tooth in a bag or other container without disinfectant. The bag or container should not have a biohazard label. Advise the patient to keep the teeth in the container until outside the hospital.

In the operating room, the OR staff will likely question giving extracted teeth to patients. Regarding precious metals, the VHA Handbook 1130.01 states: A patient may retain an unserviceable prosthesis that has been inserted, or extracted teeth containing precious metals, whether or not provided by VA. A notation that this prosthesis has been returned to the patient must be documented by VA staff in the electronic record. If the patient prefers not to accept the prosthesis, this decision must also be documented in the electronic record by VA staff.

Amalgam containing teeth, if not taken home by the patient, should be recycled. The VA Service and Distribution Center (SDC) in Hines, IL is responsible for the receipt and recovery of precious metal products and X-ray film for VA Hines SDC requests all items to be disinfected, then ship dry. Use a non-bleach disinfectant to avoid releasing Hg.

Information from the SDC: To ship Dental scrap of all kinds or Dental x-ray film to the SDC please send an e-mail to: SDCPreciousMetals@va.gov . Once SDC has answered your questions and reviewed your VA Form 134 and your shipment is cleared to ship (you will receive a return e-mail message stating the shipment can or cannot be shipped) please do the following:

1) Shipping stations will always use UPS Next Day Air service when shipping these materials to the SDC. Please use UPS Account Number A4E692.
2) Reminder: do not to ship on a Friday or before a holiday.
3) The shipping station will notify by e-mail Scott Bitner, John Burke, and Dennis Connolly at SDCPreciousMetals@va.gov that the shipment has left and provide the UPS tracking number; to the e-mail group: SDCPreciousMetals@va.gov This will be done the same day that the shipment leaves the shipping station. The morning after notification one of the above named individuals will track the package or packages to determine status.
4) Shipping address:

   Scott Bitner-PMP
   708-786-7729
   VA SDC Bldg. 37 Dock Door 14
   1st Ave. 1 Blk. North of 22nd Street
   Hines, IL. 60141

Memorandum 796-13-02, Guidance for Recycling of X-ray and Precious Metals, provides further information.

Radiology:

Digital radiography has, among its many advantages, made infection control an easier process as compared to using conventional film packets. Intra-oral corded sensors, as per CDC, may be covered in a plastic barrier. After use, the barrier is removed and the sensor disinfected with an intermediate level disinfectant.

With phosphor plates, the plastic envelope, while covering most of the film, leaves an opening at the fold which could allow oral fluids to enter. Some plate manufacturers allow chemical disinfection of the plate, and some newer plate readers include ultraviolet light disinfection during image capture. In either case the phosphor sensor needs to be removed aseptically, avoiding touching the plate with contaminated gloves.

Film-based radiology requires careful consideration to maintain cleanliness. At least two products are available with film packaged in a sealed plastic barrier. After exposure, the pouch can be opened in daylight, the internal film packet dropped onto a clean surface, and the film packet then can be handled with clean hands, transporting to the dark room. For dental services with film-based radiography, this type of product is recommended.

Conventional film radiograph without a sealed plastic barrier requires the contaminated film packets be transferred to the dark room. After exposure, the film packets can be placed in a cup, keeping the cup's exterior clean. The cup is transferred to the dark room with clean hands contacting the cup exterior. In the dark room, clean gloves are donned and the film packets opened, allowing the film to drop onto a clean surface. After opening all the packets, the gloves are removed and, with clean hands, the film is loaded into the developer.

Panoramic Radiography:

The bite block with panoramic radiography machines is a semi-critical device. Disposable, single patient-use bite blocks are the best option. If not available, used bite blocks should be autoclaved by SPS, per manufacturer's instructions.

Dental Hygiene Considerations:

A tenet of treating DUWLs is for the dental unit to have a water reservoir. Cavitrons are recommended to be plumbed through the dental unit, drawing water from the unit's reservoir. Just as for other DUWLs, the Cavitron needs to have treated water, and the lines need to be accessible for shocking, if waterline testing results warrant. A Cavitron plumbed directly to the hospital (city) water does not meet these requirements.

Disposable, single patient-use prophy angles are a viable option, reducing the dental service's RME load.

Dentists and dental hygienists who are eligible to perform basic periodontal procedures are permitted to sharpen these instruments. Instruments may be sharpened chairside with

sharpening stones that have been sterilized according to manufacturer's recommendations. Autoclavable sharpening stones are available in the market.

Instrument sharpening machines are difficult, if not impossible, to sterilize. Use a clean technique to prevent contaminating the machine. Terminally sterilized instruments may be sharpened on the machine, after which the instruments are returned to SPS for reprocessing. This same process may be followed if non-sterile sharpening stones are used – terminally sterilized instruments can be sharpened, and then returned to SPS for reprocessing. In either case, the sharpening device must not become contaminated with blood or OPIM if the sharpening device manufacturer does not provide cleaning/sterilization instructions.

SPS will not reprocess diamond coated instruments, including diamond coated ultrasonic scaler inserts and diamond coated sharpening cards. If diamond coated ultrasonic inserts are used, then they must be sterile prior to use, single patient-use, disposable items.

Dental Laboratory Considerations:

For discussion in this section on dental laboratory infection control procedures, the term *patient care items* will include any contaminated items going to the dental laboratory. This definition includes prostheses, crowns, associated casts, laboratory bins, and facebows, for examples.

It is an important tenet for VA Dentistry infection control that the dental laboratory is separated from RME requirements. By disinfecting all patient care items coming from the clinic and again prior to delivery to the patient, the lab and associated equipment will not become contaminated.

The dental laboratory should present a clean and organized appearance.

PPE worn in the clinic should not enter the dental laboratory. Personnel in the laboratory may opt to wear PPE, understanding the laboratory PPE is not related to the Bloodborne Pathogen Standard. Gloves and gowns may be indicated to keep hands and undergarments clean. Masks may be indicated to avoid inhaling dust, and eyewear may be indicated for protection from foreign bodies. Gloves, masks and gowns worn in the dental laboratory should not be worn in clinical areas. Eyewear worn in the dental laboratory may be worn in clinical areas.

Disinfecting any contaminated patient care items prior to entering the lab and disinfecting any patient care items prior to delivery to the patient isolates the dental laboratory from the RME arena. No dental laboratory equipment need be considered RME, and therefore no dental laboratory equipment should require SPS reprocessing or RME related SOPs. Routine cleaning is indicated, however.

A timer should be used to verify that the patient care item has been disinfected according to the manufacturer's recommended contact

time. It's human nature to be hurried when taking patient care items to and from the laboratory. Short contact time intermediate level disinfectants are a good option to address this concern.

Touch the timer with clean hands only. If the timer becomes contaminated it will create the need for an RME SOP, and likely the timer manufacturer has no reprocessing instruction.

The wet pumice bin, with its moist environment, should be cleaned on a daily basis. Discard the rag wheel and pumice, clean the station, and dry. The purpose of the daily cleaning is not due to concern for patient to patient contamination, as the patient care items have been disinfected prior to polishing. The purpose of the cleaning is to prevent mold and other airborne organisms from growing in the moist environment. Similarly other wet laboratory equipment, such as pressure pots, should be cleaned and dried at the end of each day's use. Pressure pots should be stored in an unsealed state to permit thorough drying. A log or other means should be used to provide evidence that pumice bin cleaning was achieved.

Laboratory PPE should be donned and removed in the laboratory, and is not to be confused with clinical (bloodborne pathogen) PPE. Gowns may be reused until visibly soiled. Masks may be reused until soiled or moist. Eyewear worn in the dental lab may be used in clinical application, and should be worn whenever rotary instruments are used, or for other concerns for debris contacting the eyes. Dental services may wish to use lab gowns of a different color from the clinical gowns, to help avoid confusion.

As disinfection of dental laboratory instruments is not a concern, wooden handled instruments, which are not permitted in clinical areas, are permitted in the dental laboratory. Corroded or rusted instruments, whether in the clinic or lab, must be discarded.

Ultrasonic Denture Cleaning Equipment:

Recommend that if ultrasonic denture cleaning equipment is used that it be used in the clinic as opposed to the lab. Ultrasonic denture cleaning equipment should be treated as non-critical RME, that means manufacturer's instructions would be followed, along with having a standard operating procedure, and competency. If the equipment is used in the clinic, it is recommend to use a device that isolates the prosthesis from the container such as a sealed plastic bag, and to use the lid over the equipment. Also recommend that if this equipment is going to be used, then somewhere in the policy it should be clearly delineated that it is for dental prosthesis cleaning only and not for instruments. The prosthesis should also be disinfected before and after each ultrasonic cleaning.

Some dental laboratory technicians prefer to use an ultrasonic when recovering processed dentures. This laboratory ultrasonic should not be used for cleaning dentures.

Shell Blaster:

A shell blaster in the laboratory is acceptable for recovering processed dentures from stone. A shell blaster should never be used to remove calculus from a denture, due to the extremely difficult nature of changing shell material and cleaning the machine after such use.

Spills:

Small spills of blood or OPIM clean-up may be accomplished with appropriate PPE – gloves, eyewear, mask, gown may all be indicated. With an intermediate level cleaner/disinfectant, the product can be used to first clean the spill, followed by another application for disinfection. If the disinfectant is only a disinfectant (not a cleaner/disinfectant), the small spill needs to first be cleaned with, for example, soap and water, then disinfectant applied for the final step. Any spill other than a small spill should be attended to by Environmental Management.

Writing SOPs for Dental RME:

Dental Services' involvement with RME reprocessing is minimal for critical and semi-critical devices. From the dental standpoint, and as determined by local policy, writing an SOP for these dental devices might be, as an example:

- Remove gross bioburden from instruments, to the extent the instrument would be ready to hand back to the dentist. This can be accomplished, for example, by using water moistened gauze.
- Place instruments in the cassette.
- Transport (via locally determined means) to the soiled utility room (or soiled cart, or other locally defined SPS pick-up area).
- Apply enzymatic to the instruments (if determined by SPS)

Preparing a table or spreadsheet for non-critical items is easier to accomplish and read than is preparing a full page SOP for each non-critical item, and may be acceptable at your facility. See attached:

- *Sample Dental Non-Critical RME Cleaning Schedule* (Attachment 6)
- *Sample Non-Critical Competency* (Attachment 7)

Purchasing RME:

Before purchasing RME, the local hospital's RME approval process needs to be followed. For example, SPS will determine if reprocessing instructions meet VA requirements, and the Standard Operating Procedure (SOP) document for reprocessing can be written before the item arrives. Logistics will determine if any recalls are in place for the item.

Non-VA RME:

Any RME used in the VA facility needs first to be approved for use. Local facilities will have a process, which involves approval from SPS, Logistics, Biomedical Engineering, and perhaps other departments. It is unacceptable to bring RME from outside VA and use on patients, even if the outside RME is brought in sterile packaging. Similarly, demonstration or trial RME from a vendor needs to go through the approval process prior to use.

Electrosurgery/Electrocautery and Laser Devices:

Electrocautery refers to direct current (electrons flowing in one direction) whereas electrosurgery uses alternating current. During electrocautery, current does not enter the patient's body – only the heated wire comes in contact with tissue. With electrosurgery, the patient is included in the circuit and current enters the patient's body. Pre-sterilized, single patient use electrocautery and electrosurgery instruments are available, and only these should be used in VA. The CDC has not offered formal recommendations on this topic; however, CDC may offer recommendations in the next dental infection control guideline it publishes.

Laser eye protection (proper safety glasses) must be worn by everyone in the room while the laser is in use.

The following discussion may help make local determinations regarding laser and electrosurgery considerations.

OSHA states, "Local smoke evacuation systems have been recommended by consensus organizations, and may improve the quality of the operating field. Employers should be aware of this emerging problem and advise employees of the hazards of laser smoke."

The National Institute for Occupational Safety and Health (NIOSH) states, "During surgical procedures using a laser or electrosurgical unit, the thermal destruction of tissue creates a smoke byproduct. Research studies have confirmed that this smoke plume can contain toxic gases and vapors such as benzene, hydrogen cyanide, and formaldehyde, bioaerosols, dead and live cellular material (including blood fragments), and viruses. At high concentrations the smoke causes ocular and upper respiratory tract irritation in health care personnel, and creates visual problems for the surgeon. The smoke has unpleasant odors and has been shown to have mutagenic potential."

NIOSH research has also shown airborne contaminants generated by these surgical devices can be effectively controlled. Two methods of control are recommended:

Ventilation

- Recommended ventilation techniques include a combination of general room and local exhaust ventilation (LEV). General room ventilation is not by itself sufficient to capture contaminants generated at the source. The two major LEV approaches used to reduce surgical smoke levels for health care personnel are portable smoke evacuators and room suction systems.

Smoke Evacuators

- Evacuators contain a suction unit (vacuum pump), filter, hose, and an inlet nozzle. The smoke evacuator should have high efficiency in airborne particle reduction and should be used in accordance with the manufacturer's

recommendations to achieve maximum efficiency. A capture velocity of about 100 to 150 feet per minute at the inlet nozzle is generally recommended. It is also important to choose a filter that is effective in collecting the contaminants. A High Efficiency Particulate Air (HEPA) filter or equivalent is recommended for trapping particulates. Various filtering and cleaning processes also exist which remove or inactivate airborne gases and vapors. The various filters and absorbers used in smoke evacuators require monitoring and replacement on a regular basis and are considered a possible biohazard requiring proper disposal.

Room suction systems, another means to control airborne contaminants, pull air at a much lower rate and were designed primarily to capture liquids rather than particulate or gases. If these systems are used to capture generated smoke, users must install appropriate filters in the line, ensure that the line is cleared and that filters are disposed of properly. Generally speaking, the use of smoke evacuators is more effective than room suction systems to control the generated smoke from non-endoscopic laser/electric surgical procedures.

Using an Evacuator:

The smoke evacuator or room suction hose nozzle inlet must be kept within 2 inches of the surgical site to effectively capture airborne contaminants generated by these surgical devices. The smoke evacuator should be ON (activated) at all times when airborne particles are produced during all surgical or other procedures. At the completion of the procedure all tubing, filters, and absorbers must be considered infectious waste and be disposed appropriately. New filters and tubing should be installed on the smoke evacuator for each procedure. While there are many commercially available smoke evacuator systems to select from, all of these LEV systems must be regularly inspected and maintained to prevent possible leaks. Users shall also utilize control measures such as "standard precautions," as required by the OSHA Bloodborne Pathogen standard.

The ability to reuse smoke evacuator tubing, filters, and absorbers is controversial. NIOSH currently recommends, “At the completion of the procedure all tubing, filters, and absorbers must be considered infectious waste and be disposed appropriately. New filters and tubing should be installed on the smoke evacuator for each procedure.” On the other hand, some manufacturers which have had their products cleared by the FDA, state that their filters can be reused on multiple patients sometimes extending for a lifetime of 35 hours or more. Currently, many VA Surgical Services reuse the filters in their operating rooms. Since this issue is not yet clearly defined, it is recommended that the issue be taken to the local facility Infection Control Committee and/or the

Reusable Medical Equipment Committee to aid in developing local policy.

Service and Companion Animals:

Dental Service Chiefs are advised to review local policy regarding animals in the dental clinic. 38 CFR 1.218 Security and law enforcement at VA facilities states that:
(iii) Service animals will be restricted from accessing certain areas of VA property under the control of the Veterans Health Administration (VHA properties) to ensure patient care, patient safety, or infection control standards are not compromised. Such areas include but are not limited to:

(A) Operating rooms and surgical suites;
(B) Areas where invasive procedures are being performed;
(C) Acute inpatient hospital settings when the presence of the service animal is not part of a documented treatment plan;
(D) Decontamination, sterile processing, and sterile storage areas;
(E) Food preparation areas (not to include public food service areas); and
(F) Any areas where personal protective clothing must be worn or barrier protective measures must be taken to enter.

Dental treatment suites are areas where invasive procedures may or may not be performed and personal protective clothing is not always required depending upon the reason for the dental service visit. The decision to allow service animals in the dental operatory is dependent on local facility policy and case-by-case considerations.

Prion Diseases

A prion is a variation from a normal protein, differing from the normal protein by the way the protein is folded. Prion diseases are currently considered the cause of spongiform encephalopathies, for which there is no know treatment and which are ultimately fatal. Some forms of prion diseases, such as variant Creutzfeldt-Jacob Disease (vCJD), are transmissible, probably related to eating animal products from animals infected with a transmissible spongiform encephalopathy, such as bovine spongiform encephalopathy (mad cow disease). Also implicated in transmission of CJD and vCJD are corneal implants and blood transfusions from infected donors, and possibly contaminated electrodes used in brain surgery. Prions have proven resistant to the usual sterilization measures.

Source for the following paragraph: CDC *Guidelines for Infection Control in Dental Health-Care Settings – 2003*
Creutzfeldt-Jacob Disease (CJD) is one of a group of transmissible spongiform encephalopathies (TSEs). TSEs are thought to be caused by unusual, self-propagating (without nucleic acid) proteins. Infection has a long incubation period – years. Prion diseases are usually fatal within one year of diagnosis, and diagnosis is made after the appearance of symptoms. In most cases (85%) no recognizable transmission mode has been found: understandable with the long incubation period. All known cases of iatrogenic CJD have involved exposure to infected central nervous tissue, such as brain and dura mater, pituitary or eye tissue.

The CDC *Guidelines for Infection Control in Dental Health-Care Settings – 2003* states, "Case control studies have found no evidence that dental procedures increase the risk of iatrogenic transmission of TSEs among humans." "Scientific data indicate the risk, if any, of sporadic CJD transmission during dental and oral surgical procedures is low to nil."

Health Care Associated Infections:

A goal of a dental infection control program is to provide a safe working environment for both staff and patients that will reduce the risk of health care associated infections (HAI) and occupational exposure to staff. Surveillance for HAI is one method to assess the effectiveness of a dental infection control program. Prevention of HAI is of paramount importance, and an increase in the rate of HAI may signal a potential problem which requires further investigation.

Invasive procedures can be tracked through spreadsheets to identify trends in post-op infection rates, triggering problem focused measures as needed. Also, surveillance programs can consist of both self-reporting and quality reviews by other providers.

Self-Reporting:
Staff members should self-report any complication/adverse event to the Dental Infection Control/Safety Officer. Dental services are also advised to review local facility policies on disclosure of adverse events.

Quality Reviews by Other Providers:
Chart reviews and clinical reviews by other providers can be performed on a periodic basis.

The following criteria meet the definition of a post-invasive procedure infection:

- Infection occurs within 30 days post procedure (or within 6 months post implant placement) and the infection appears to be related to the procedure (example: patient was not exhibiting signs/symptoms at the time of the initial appointment) and one or more of the following is present:
    - Purulent discharge/drainage from the surgical site.
    - Fever equal to or greater than 101 degrees F.
    - An abscess that is observed post-operatively.
    - Provider diagnosis of infection with or without treatment of an antibiotic.

The following are not considered HAI:

- Colonization in open wounds that are not causing adverse clinical signs or symptoms
- Inflammation which is a normal sequela due to tissue response to injury or other non-infectious causes
- Post extraction alveolar osteitis
- Suture abscesses
- Periapical inflammation flare-ups
- Recurrent herpes infections

Website References:

American Dental Association Infection Control Webpage
http://www.ada.org/2697.aspx

American Dental Association Statement on Dental Unit Waterlines April 2012
A revised waterline statement in response to a published case report concerning an 82-year-old otherwise healthy woman who developed Legionnaire's disease after a dental visit (Italy).
http://www.ada.org/1856.aspx

CDC Extracted Teeth Opinion
http://www.cdc.gov/oralhealth/infectioncontrol/faq/extracted_teeth.htm

CDC Glossary, Infection Control in Dental Settings
http://www.cdc.gov/OralHealth/infectioncontrol/glossary.htm

CDC Guidelines for Infection Control in Dental Health-Care Settings – 2003
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm

CDC Summary of Infection Prevention Practices in Dental Settings – 2016
https://www.cdc.gov/oralhealth/infectioncontrol/pdf/safe-care2.pdf

OSHA Occupational Exposure to Bloodborne Pathogens 29 CFR Part 1910.1030
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

OSHA 2001 Revisions to the Bloodborne Pathogens Standard
Engineered Controls, Sharps Protection, Needless Systems
https://www.osha.gov/needlesticks/needlefact.html

OSHA Quick Reference Guide to Bloodborne Pathogens Standard
https://www.osha.gov/SLTC/bloodbornepathogens/bloodborne_quickref.html

OSHA Dentistry Website
Contains multiple hyperlinks to information of dental interest
https://www.osha.gov/SLTC/dentistry/index.html

OSHA Opinion Regarding Anesthetic Carpule Disposal
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=25618

OSHA Needlestick Safety and Prevention Act 2000
http://www.ncbi.nlm.nih.gov/pubmed/16902692

FAQs Needlestick Safety and Prevention Act 2000
https://www.osha.gov/needlesticks/needlefaq.html

OSAH Regulatory Framework for Disinfectants and Sterilants
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a2.htm

Surgical Wound Classification
With permission from University of Connecticut Health Center Nursing Department
http://nursing.uchc.edu/unit_manuals/perioperative/or/docs/Surgical%20Wound%20Classification.pdf

USAF Dental Evaluation & Consultation Service
http://www.afms.af.mil/decs/

VA Management of Non-Biological Implantable Devices 2009-062
http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=2120

VA Precious Metal Recovery Program
http://vaww.va.gov/oal/sdc/preciousMetalsRecovery.asp
http://vaww.va.gov/oal/docs/sdc/memo796-13-02.pdf

VA Required Hand Hygiene Practices Directive 2011-007
http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=2367

VA Reusable Medical Equipment Directives 2009-004 & 2009-031
http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1824
http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=2039

Attachments

Document Title	Attached File
Dental Service Transport Containers and Evacuation Instruments	Dentistry and SPS signed joint memo.pd
Glossary (CDC): Link to CDC IC Glossary	CDC Glossary.pdf
Guidance for Recycling X-Ray Film and Precious Metals, Memorandum 796-13-02: Link to VA Memorandum 796-13-02	Recycling Guidance Memo 796-13-02.pdf
Sample Contaminated Instrument Transport	Sample Contaminated Instrur
Sample Dental Infection Control Policy	Sample Dental Infection Control Polic
Sample Know Where to Throw	Sample Know Where to Throw.pdf
Sample Non-Critical RME Cleaning Schedule	Sample Non-Critical RME Cleaning Schedu
Sample Non-Critical Competency	Sample Non-Critical Competency.docx
Surgical Wound Classification: Link to Wound Classification Chart	Surgical Wound Classification.pdf

Revision History Log (*continued from Page 1*)

Date of Revision	Description	Authors and Reviewers
6/5/2015 5/4/2015 3/8/2015	Page 13: Updated PPE Gowns section. *Supersedes revision made on 5/4/2015*. Page 13: Updated PPE Gowns section. *Supersedes revision made on 3/8/2015*. Page 10: Added section to define the work area. Page 13: Updated PPE Gowns section to reference relavent ANSI/AAMI standards for conformance level and reusable tracking requirements. Page 28: Added Dental Unit Waterlines language to include shocking and water quality testing prior to using new dental units. Page 31: Added Transport of Instruments language to clarify the instrument transport process.	Office of Dentistry (OoD) Patricia E. Arola, DDS, MHA, FAGD, FACHE Susan C. Bestgen, DDS Michael A. Joseph, DDS, MSD Scott A. Trapp, DDS, MBA, MPH
8/24/2014	Page 31: Added clarification for application of pretreatment in the dental operatory. Page 31: Added additional clarification on transport bins and storage of contaminated instruments for SPS pickup.	Office of Dentistry (OOD) Patricia E. Arola, DDS, MHA, FAGD, FACHE Susan C. Bestgen, DDS Michael A. Joseph, DDS, MSD Scott A. Trapp, DDS, MBA, MPH Sterile Processing Services (SPS) Karen Mathena Teresa Wells
8/21/14	Page 45: Added Memorandum regarding Dental Service Transport Containers and Evacuation Instruments.	Office of Dentistry (OOD) Patricia E. Arola, DDS, MHA, FAGD, FACHE Sterile Processing Services (SPS) Teresa Wells, RN, BSN, MBA
6/02/2014	Page 21: Updated the High Volume Evacuation (HVE) and Saliva Ejector (SE) Valves reprocessing requirements. Page 27: Changed language to show that water testing lab certified in environmental specimens is preferred. Page 28: Changed language to show that water testing lab certified in environmental specimens is preferred.	Office of Dentistry (OOD) Patricia E. Arola, DDS, MHA, FAGD, FACHE Susan C. Bestgen, DDS Michael A. Joseph, DDS, MSD Scott A. Trapp, DDS, MBA, MPH Sterile Processing Services (SPS) Karen Mathena

	Page 28: Added waterline testing results to be reported to either the Infection Control Committee or the Safety Committee as appropriate for the facility.	Teresa Wells National infectious Disease Marla Clifton Kathleen DeRoos Stephen Kralovic
4/24/2014	Page 4: Revised Introduction to clarify that single patient-use, disposable products are preferable to reusable medical equipment. Page 5: Added Dr. Scott Trapp as an author. Page 8: Added VA's requirement to follow manufacturer's reprocessing instructions and to follow local protocol for RME purchase approval. Page 16: Added RME is to be stored in a temperature and humidity controlled and monitored space in a central location in the dental clinic. If monitors are out of range, local policy will dictate procedure. Page 18: Added personnel are not to return unused sterile packs to the clean storage room but they can be stored in a protected environment other than the clean storage space to be used on another patient during that same workday. Page 18: Added equipment and supplies not ready for patient use are not to be stored in operatories. Page 19: Added the option of single patient use, pre-sterilized burs is highly encouraged. Page 19: Revised that SPS will not reprocess diamond coated instruments. Page 21 Revised SPS' processing and handling of HVE and Saliva Ejector valves. Page 31: Added the process of transporting contaminated instruments is under SPS's direction. Page 31: Added the transportation of contaminated instruments in tubs. Page 33: Revised the handling and disposal of waste amalgam, extracted teeth and precious metal recovery. Page 35: Added dentists and dental hygienists who are eligible to perform basic periodontal procedures are permitted to sharpen periodontal instruments.	Office of Dentistry (OOD) Patricia E. Arola, DDS, MHA, FAGD, FACHE Susan C. Bestgen, DDS Bradley Kasson, DDS Michael A. Joseph, DDS, MSD Scott A. Trapp, DDS, MBA, MPH Sterile Processing Services (SPS) Teresa Wells Karen Mathena OOD/SPS Program Office Summit March 25-26, 2014

	Page 39: Added reuse of smoke evacuator tubing, filters and absorbers should follow local policy.	
1/6/2014	Page 16: Revised the place and draw sequence of sterile “bookcase style” stored packs on storage shelf. Place packs on the left, draw packs from the right.	Bradley Kasson, DDS