Infection control practice guidelines in dental hygiene - Part 1

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ABSTRACT

The paper on infection control is divided into two parts. Part I, in this issue, compares several infection control practice guideline documents from the Centers for Disease Control, the Canadian Dental Association, the Canadian Forces Dental Services, the United States Air Force, and several relevant documents from the Organization for Safety and Asepsis Procedures.

Part II entitled, "Current Issues in Infection Control" in volume 42.3, discusses four current issues including compliance with infection control practices, HIV, HBV and HCV, dental unit water lines, and aerosols. Part II provides recommendations for dental hygienists, educational institutions, several dental hygiene organizations, the National Dental Hygiene Certification Board, the Commission on Dental Accreditation Canada, and researchers.

RÉSUMÉ

L'article sur la prévention des infections comprend deux volets. Le premier compare plusieurs guides pratiques de prévention des infections, ceux de Centers for Disease Control, (centres américains de prévention des maladies), de l'Association dentaire canadienne, des Services dentaires des Forces canadiennes et de la force aérienne des États-Unis, ainsi que plusieurs documents pertinents de l'Organization for Safety and Asepsis Procedures (organisation pour la sécurité et les procédures d'asepsie).

Le deuxième volet qui traite des problèmes courants dans la prévention des infections, se penche sur quatre problèmes actuels, notamment: l'observance des pratiques de prévention, le VIH, le VHB et le VHC, les conduites d'eau des unités dentaires et les aérosols. Le deuxième volet formule des recommandations destinées aux hygiénistes dentaires, aux établissements de formation, à plusieurs organismes d'hygiène dentaire, au Bureau national de la certification en hygiène dentaire, à la Commission d'agrément dentaire du Canada et aux chercheurs.

BACKGROUND

In the broader health system, infection control has become a significant issue for government, health professionals and the public, given national public health issues, such as severe acute respiratory syndrome (SARS), pandemic influenza and global problems with multi resistant bacteria, such as Methicillin-resistant *Staphylococcus aureus* (MRSA). The media reflects public concerns with recent information regarding patient infections, poor hand hygiene, and improper sterilization of equipment in hospitals.[1,2] Infection control in dental hygiene practices has also grown to a level of considerable importance, and given the pace of population ageing, dental hygienists are considering how their infection control practices will affect a client population with potentially increased susceptibility to infection.

In the 1980s, Universal Precautions were designed to protect against bloodborne pathogens such as hepatitis B virus (HBV), human immunodeficiency virus (HIV), and hepatitis C virus (HCV). In 1996, the Centers for Disease Control (CDC) published "Standard Precautions" which expanded upon Universal Precautions by covering more bodily fluids and sites, including blood, body fluids, secretions, excretions (except sweat), non-intact skin and mucous membranes. The new Standard Precautions incorporated body substance isolation (BSI) practices.[3] Standard Precautions are meant to be used with all clients, regardless of age, gender, diagnosis, or whether they are under isolation for a specific disease. Dental hygiene clients may appear clinically healthy according to a physical examination and medical history. Therefore, Standard Precautions should be applied to all clients, regardless of their infection status.

Within the context of this paper, guidelines for infection control are defined as systematically developed statements to assist dental hygienists make decisions about appropriate health care for specific clinical circumstances. Dental hygiene clients can also use guidelines for infection control to obtain a better understanding of how dental hygienists incorporate infection control into their dental hygiene care. They are meant to be used by dental hygienists in a daily routine, as an integral part of the clinical decision-making process and as part of a quality assurance process. Guidelines for infection control provide a baseline for infection control procedures and provide protocols to minimize the risk of injury or disease for dental hygiene clients, and dental hygienists. The guidelines do not attempt to provide procedures for every situation, or every dental hygiene setting. Clinical judgment regarding the most appropriate protection for a specific procedure should be based upon the dental hygienists knowledge of the principles of infection control. In some instances, dental hygienists may set their own more stringent guidelines, or their workplace may set guidelines that are more stringent. For example, some larger health facilities may require head and shoe covers during all procedures that may generate spray or spatter of blood or Other Potentially Infectious Material (OPIM), and other facilities may require daily spore sterilizer testing.

The legislative regulation of infection control falls within the mandate of provincial or territorial dental hygiene regulatory bodies. These regulatory bodies may adopt or modify existing guidelines and use them in the context of complaints, discipline, quality assurance processes and informal resolution agreements. Therefore, dental hygien-

Canadian Dental Hygienists Association, Ottawa
Submitted 22 Oct. 2007; Revised 10 Dec. 2007; Accepted 15 Jan. 2008.
This is a peer reviewed article.
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ists must follow the standards or guidelines developed by their regulatory bodies in order to maintain their registration and ability to practice.

All of the self-regulating dental hygiene colleges include some varying degree of reference to infection control in their dental hygiene standards documents.[4,5,6] British Columbia refers to guidelines published by the CDC, Alberta refers to the guidelines from CDC, Canadian Dental Association and Health Canada and Ontario refers to scientifically accepted infection control procedures.

This paper has two main purposes. First, to gather comprehensive background information on infection control that is pertinent to the Canadian Dental Hygienists Association (CDHA), its members, oral health practitioners, educators, researchers, policy-makers and the public. Second, the paper examines the infection control literature in order to explain issues in some detail and to permit the CDHA to base its guideline statement on in depth analyses.

METHODOLOGY

The methodological approach in this paper is a comprehensive review and comparison of the major features of several guidelines for infection control for oral health practitioners in Canada and the USA. The author also reviews and analyzes current scientific literature on a selected list of topics on infection control for dental hygiene practice, including compliance with infection control practices to prevent transmission of Human immunodeficiency virus (HIV), Hepatitis C virus (HCV), Hepatitis B virus (HBV), aerosols, and Dental Unit Water Lines (DUWL). Topics were chosen for their recent national or global significance, and/or for the large number of studies conducted on some of the topics.

The literature search was limited to English language studies in MedLine, Cochrane controlled trials register, the CINAHL Database and Google Scholar, from 2003 to 2007. Additional articles were identified from reference lists of published studies. The search also included "grey" literature (information not reported in the published scientific literature), and web sites known to contain information on this topic. Topic experts were consulted at several development stages, and input on the draft paper was obtained from CDHA members and other dental hygiene organizations.

A REVIEW AND COMPARSION OF INFECTION CONTROL GUIDELINE DOCUMENTS

The highlights of several guidelines for infection control for oral health practitioners in Canada and the USA are listed in Table 1. The table highlights major features of the original documents that should be consulted for details. The documents reviewed are:

- Centers for Disease Control (CDC) in the USA: *Guidelines for Infection Control in Dental Health-Care Settings*-2003.[7] (No comparable Canadian government document exists specifically for dental health care settings).
- Canadian Dental Association (CDA): *Infection Prevention and Control in the Dental Office: An opportunity to improve safety and compliance*, 2006.[8]
- Canadian Forces Dental Services (CFDS): *Infection Control Guidelines*, 2006.[9]
- United States Air Force (USAF): *Guidelines for Infection Control in Dentistry*, 2004.[10]
- Organization for Safety and Asepsis Procedures (OSAP), *A Global Dental Safety Organization*: OSAP Position Paper: *Percutaneous Injury Prevention*, 2002.[11] *Dental Unit Waterlines: OSAP Recommendations to Clinicians*.[12] Issue Focus: *Anthrax and Dental Practice*.[13] and Issue Focus: Severe Acute Respiratory Syndrome: *SARS and the Dental Office*.[14]

The American Dental Hygienists Association (ADHA) has not developed an infection control document; however, their web site recommends that dental hygienists consult with CDC's guidelines. The Public Health Agency of Canada (PHAC) does not have an infection control document that pertains specifically to dental or dental hygiene practice settings; however, the organization is in the process of developing occupational health guidelines.

A comparison of these guidelines is found in Appendix A. The infection control document of the CDC, the most comprehensive document available on this issue, is compared with the four other guideline documents. The comparative information is classified as supplemental, more rigorous, and less rigorous. The supplemental category represents information that was not included in the CDC document. The two "rigorous" classifications represent recommendations that were either more or less rigorous in comparison to the CDC document. Appendix A also includes a brief background and purpose of the guidelines.

The comparison shows that three infection control documents of the CDA, the CFDS and the USAF contain guidelines that are supplemental, more rigorous and less rigorous than the infection control document of the CDC. The documents of OSAP provide only supplemental information. The areas in which the three documents are more rigorous than the infection control document of CDC primarily pertain to immunization programs, personal protective clothing, and sterilization and disinfection of patient-care items, and DUWL. For instance, the following issue is found in the more rigorous category: the CDA and the USAF call for preprocedural mouth rinse in order to reduce aerosol production. However, the CDC indicates that the use of preprocedural mouth rinse is an unresolved issue, since there is a need for more research to confirm its efficacy. A second example is the CDA's call for oral health professionals to include medical history questions regarding dura mater transplantation, and familial history of Creutzfeldt-Jakob Disease (CJD) and variant Creutzfeldt-Jakob Disease (vCJD). Dental instruments and devices touching pulpal tissue (e.g. endodontic broaches and files, access opening burs) of these clients should be discarded in sharps containers after each client use. CJD is thought to be caused by infection with a prion, which is not inactivated by the standard sterilization methods used in oral health care settings. In contrast, CDC reports this is an unresolved issue and therefore makes no recommendations.

The areas where the documents were less rigorous than CDC's guidelines pertain mostly to sterilization and disin-

fection of patient care items. For example, the USAF recommends cleaning digital sensors with intermediate to level disinfectant, whereas the CDC recommends high level disinfectant for digital sensors. The CFDS calls for monthly biological monitoring of a sterilizer for semi critical care items and weekly monitoring of a sterilizer for critical care items. In contrast, CDC calls for all heat sterilizers of critical and semi critical instruments to be monitored with biological indicators weekly.

Part II of Infection Control, entitled "Current issues in infection control", will be published in volume 42 no.3 (May-June 2008).

APPENDIX A

A COMPARISON OF INFECTION CONTROL DOCUMENTS

The Centers for Disease Control and Prevention (CDC) Infection Control Guidelines in Dental Health-Care – 2003 document is compared with infection control information from four other organizations. The information is classified as follows:

- supplemental (information that was not included in the CDC document),
- more rigorous (though the issue is mentioned in the CDC document, the information in this category is more rigorous), and
- less rigorous (though the issue is mentioned in the CDC document, the information is less rigorous).

Centers for Disease Control and Prevention (CDC): Infection Control Guidelines in Dental Health-Care Settings – 2003[7]

These guidelines apply to all oral health settings and are intended for clinicians, public health practitioners and the public. The guidelines are based on a range of rationale from systematic reviews to expert opinion, and each recommendation is rated for its strength. The CDC rating scheme is located at the bottom of Table 1.

Canadian Forces Dental Services (CFDS) Infection Control Guidelines, 2006[9]

This document is based on infection control protocols developed by the Laboratory Centre for Disease Control (LCDC) of the Public Health Agency of Canada and the CDC of the USA. It provides a baseline for standard infection control procedures throughout the CFDS. Similar to the Canadian Dental Association (CDA) document, the CFDS document highlights the lack of strong scientific evidence from clinical trials to support infection contol procedures for oral health professionals. Therefore, many of the recommendations are based on opinions of respected authorities on the basis of clinical experience, descriptive studies, or reports of expert committees, and not from clinical trials. This document uses the term "routine practices", a term adopted from the Public Health Agency of Canada for the standards of practice that should be followed for the care of all patients at all times. Agencies such as the CDC use the term "standard precautions" with the same meaning.

Information that supplements the CDC document on infection control:

- CFDS guidelines include a call for vaccinations against polio, tetanus/diphtheria and influenza, which are not included in the CDC guideline.
- For HIV prophylaxis to be effective treatment must begin within two hours of exposure. CDC confirms the importance of this timing in the 2005 CDC's guidelines for the management of occupational exposure to HIV[20].
- Sinks for hand washing should not be used for any other purpose.
- Consider the use of hair covers and do not allow hair to contact the client.
- Employ a rubber dam whenever possible to reduce exposure of the dental personnel to microorganisms.
- All oral health professionals must wear a reusable or disposable uniform, which must remain at the clinic, where access to separate external laundering facilities are available. Do not launder with family wash.
- Wash utility gloves in disinfectant soap and reuse.
- Discard contaminated disposable items in the operatory waste container, which should be cleared on a daily basis.
- Use of a DUWL conditioner is recommended.

More rigorous guidelines than the CDC document on infection control:

- Clients in the supine position should also wear protective eyewear. CDC states that protective eyewear for patients shields their eyes from spatter or debris, but there is no specific directive for providing eyewear.
- Areas such as switches, headrests and bracket trays, chair adjustment controls, light handles, air/water syringe handles, saliva ejector and vacuum couplings, unit switches and handles, mobile cart or operatory counter surfaces, and operatory sink hand-operated valves require intermediate or high level disinfectant. CDC's guidelines call for a low or intermediate level disinfectant.
- Reduce the aerosol production by the following: consider asking clients to brush their teeth and/or rinse their mouth with a mouthwash prior to dental treatment. Three 10-second rinses can temporarily reduce a client's oral microbial count by up to 97 per cent. CDC reports this is an unresolved issue.
- Specific Creutzfeldt-Jakob Disease (CJD) infection control precautions, in addition to standard precautions are recommended for clients who have developed, are suspected of having developed, or are at substantially increased risk of developing CJD. These precautions include the following:

a. use single-use disposable items and equipment whenever possible,
b. consider difficult to clean items (e.g. diamond burs) as single use disposable and discard after use,
c. keep the instrument moist until cleaned and decontaminated to minimize the drying of tissues and body fluids on a device,
d. clean instruments thoroughly and steam-autoclave at 134°C for 18 minutes,
e. do not use flash sterilization for processing instruments or devices. CDC's guidelines report that this is an unresolved issue and therefore there are no recommendations.

Less rigorous guidelines than the CDC document on infection control:

- After removing the barrier from the digital sensor, clean and disinfect with an intermediate level activity. CDC's guidelines recommend a high level disinfectant.
- Biological monitoring of a sterilizer for semi critical care items should take place monthly and for critical care items the sterilizer should be tested weekly. CDC's guidelines call for weekly monitoring of sterilizers of critical and semi critical care items.

Canadian Dental Association (CDA)
Infection Prevention and Control in the Dental Office: An opportunity to improve safety and compliance, 2006[8]
Scientific evidence supporting the CDA document comes primarily from CDC's guidelines and documents, CDA documents, published research papers, U.S. Department of Labour documents, and position papers from the Association for Professionals in Infection Control and Epidemiology (APIC). The CDA document points out that there is a lack of strong scientific evidence from clinical trials to support infection control procedures. The evidence is drawn from respected authorities on the basis of clinical experience, descriptive studies, or reports of expert committees.

Supplemental information:

- Proper disposal of single use masks.
- An eyewash station should be available and staff training on location, function and indications for use.
- Personal Protective Equipment (PPE) designed for re-use can be washed with soap and water. Infected PPEs can be disinfected according to the manufacturer's directions. Disposable PPE items should be discarded following use.
- Use dental rubber dams and high volume/high velocity suction whenever the creation of droplets, spatter, spray and aerosol occurs.
- Utility gloves should be disinfected or sterilized at the end of the day.
- Don't expose gloves to heat sources, such as x-ray unit controllers, lasers, fans, electrical generators, suction machines or motors.
- Don't use waterline heaters. Flush lines for at least 2-3 minutes at the beginning of the day, without handpieces, air-water syringe tips and ultrasonic tips detached.
- DUWL should be cleaned at least once a week with an enzymatic cleaner. CDC recommends following manufacturer's instructions for cleaning.

More rigorous guidelines than the CDC document on infection control:

- Double gloving may be used for procedures involving the handling of multiple sharp metal instruments or during longer procedures. CDC reports this is an unresolved issue.
- Low-temperature sterilization using ethylene oxide gas (EtO) may be used in larger healthcare facilities, such as hospitals, but the hazardous vapours produced make it impractical for private practice settings. CDC's guidelines list EtO as a low temperature sterilization method.
- Antimicrobial mouth rinses should be used by a client prior to a dental procedure. CDC reports this is an unresolved issue.
- OHP's should include medical history questions regarding dura mater transplantation, and familial history of CJD and variant Creutzfeldt-Jakob Disease (vCJD). Dental instruments and devices touching pulpal tissue (e.g. endodontic broaches and files, access opening burs) should be discarded in sharps containers after each client use. CJD is thought to be caused by infection with a prion, which is not inactivated by the standard sterilization methods used in oral health care settings. CDC reports this is an unresolved issue and therefore makes no recommendations.

Less rigorous guidelines than the CDC document on infection control:

- The film packet should be disinfected using a hospital-grade tuberculocidal intermediate-level disinfectant. CDC calls for a high-level disinfectant for film holding and positioning devices.
- Dispose extracted teeth in general waste. CDC calls for treatment as regulated medical waste.

United States Air Force (USAF)
Guidelines for Infection Control in Dentistry, 2004[10]
The United States Air Force (USAF) document on infection control appears to incorporate a broader range of regulatory documents, compared with those of CDA and the CFDS. The goals of the USAF infection control guidelines are to comply with applicable federal, state, and local regulations governing infection control, job safety, and management of regulated medical waste. The US federal regulations include those issued by the Occupational Safety and Health Administration (OSHA),

the Food and Drug Administration (FDA), and the Environmental Protection Agency (EPA). The USAF infection control guidelines also incorporate recommendations made by non-regulatory agencies including the American Dental Association (ADA), the CDC and the Joint Commission for the Accreditation of Health Care Organizations.

Supplemental information:

- For a period of 3 years, maintain training records documenting each training session provided by the dental service in accordance with current OSHA and medical treatment facility guidelines.
- Label package with: sterilizer identification number, load number, operator's initials, and indefinite shelf life label. The use of self-adhesive labels or tapes is preferred. Labelling makers should be indelible, nonbleeding and nontoxic.
- In the absence of manufacturer recommendations for monitoring dental unit water quality, test water from each unit monthly for three months. If the unit meets standards during this period, then monitor water from the dental unit quarterly at a minimum. It is recommended to use a rotating schedule, testing several units each month. If test remains positive, a "shock-treatment of the waterlines may be indicated. CDC calls for following manufacturer's directions.
- Decontaminate extracted teeth: clean and place extracted teeth in a leak proof container labeled with a biohazard symbol; place amalgam-free teeth in a heat resistant glass container; fill the container no more than half-way with de-ionized or distilled water or saline, and loosely cover; process through a steam sterilizer at 121° C for 40 minutes using a fluid or liquid cycle. At the end of the cycle, remove the container slowly without shaking to avoid the boiling over of the fluid.
- At a minimum, clean and disinfect rag wheels and, clean and surface disinfect lathes daily. Clean and disinfect case pans and articulators when visibly soiled, and after each case is completed. CDC calls for following manufacturer's instructions.
- Inspections: Conduct and document routine scheduled or unscheduled inspections of dental treatment rooms, dental laboratory and radiology areas, decontamination and sterilization areas, and locations where sterile and/or patient-care items are stored.
- Waterline Monitoring: Implement a waterline-monitoring program as described in this document.
- Health-Care Associated Infections (HAI): Surveillance for HAI provides data useful for identifying infected patients, determining the site of infection, and identifying the factors that contribute to HAI. Information containing patient identifiers or patient care staff should be carefully handled. Data should not be used for punitive purposes, but should be viewed as an opportunity to improve patient/ employee/ process outcome. Surveillance goals should include:
  - providing objective assessment of dental HAI rates, reducing morbidity and cost, establishing baseline infection rates based on well defined case definition criteria,
  - educating DHCP concerning data relevant to their practices,
  - evaluating control measures designed to reduce infection rates,
  - complying with accreditation standards, defending malpractice claims through implementation of an active surveillance program, and
  - providing data useful in clinical research.

More rigorous guidelines than the CDC document on infection control:

- Clean and disinfect clinical contact surfaces that are not barrier protected with at least an intermediate-level disinfectant. CDC calls for a low or intermediate level disinfectant.
- Do not install EtO sterilization equipment in dental clinics. CDC lists EtO as a low temperature sterilization method.
- The use of a preprocedural antimicrobial mouth rinse is optional, but should be considered to reduce the level of microorganisms in aerosols. CDC reports this is an unresolved issue.

Less rigorous guidelines than the CDC document on infection control:

- Digital radiography sensors – use barriers and disinfectant with an intermediate level activity. CDC recommends a high level disinfectant for digital sensors.

Organization for Safety and Asepsis Procedures (OSAP)

a. Position Paper: Percutaneous Injury Prevention, 2002; Dental Unit Waterlines.[12]
b. OSAP Recommendations to Clinicians; Issue Focus: Anthrax and Dental Practice.[13]
c. Issue Focus: Severe Acute Respiratory Syndrome: SARS and the Dental Office.[14]
http://www.osap.org/index.cfm

Supplemental information:

- Avoid heating dental unit water.
- Consider using a separate water reservoir system to eliminate the inflow of municipal water into the dental unit.
- Monitor scientific and technological developments in the area of DUWL to identify improved technical approaches as they become available.
- Cooperate with the oral healthcare industry to develop and validate standard protocols for maintaining and monitoring dental unit waterlines.
- It is important to ensure that the sterile water system or device marketed to improve dental water

quality has been cleared for market by the U.S. Food and Drug Administration.
- SARS and the dental office: CDC recommends that clinicians evaluating suspected cases should apply standard precautions - air borne precautions (e.g., N-95 respirator), and contact precautions (e.g., gowns and gloves). Until the mode of transmission had been positively identified and precisely defined, eye protection also should be worn for all patient contact.

Dental Personnel Protection:
- Disposable gloves which must be changed after every patient.
- Chin length plastic face shields or surgical masks and protective eyewear.
- Make sure the mask covers the mouth and the nose.
- Reusable or disposable gowns.

- Cleaning and disinfection - use a hospital grade disinfectant or 1:100 dilution of household bleach. Make sure the disinfectant is compatible with your dental equipment.

TABLE 1: INFECTION CONTROL PRACTICE GUIDELINES

Highlights from infection control documents. Follow the web site links to access the complete document. Acronyms and rating definitions are listed in "Legends for Table 1" on page 102.

CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
Centers for Disease Control and Prevention (CDC): Guidelines for Infection Control in Dental Health-Care Settings[7] - 2003. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm#top http://www.guideline.gov/summary/summary.aspx?doc_id=4540andnbr=003354andstring=infection+AND+control+AND+dental+AND+health+AND+care+AND+settings+AND+2003 http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm	**Canadian Dental Association (CDA): Infection Prevention and Control in the Dental Office: An opportunity to improve safety and compliance[8], 2006.** http://www.cda-adc.ca/_files/members/clinical_information/infection_control/ infection_control_manual_06.pdf	**United States Air Force (USAF): Guidelines for Infection Control in Dentistry[10], 2004.** decs.nhgl.med.navy.mil **or** https://decs.nhgl.med.navy.mil/1QTR05/usaficguidelinesjanuary06.pdf	**Canadian Forces Dental Services (CFDS): Infection Control Guidelines[9], 2006.** Available only in printed format.	**Organization for Safety and Asepsis Procedures (OSAP): Position Papers: Percutaneous Injury Prevention[11],2002; Dental Unit Waterlines: OSAP Recommendations to Clinicians[12]; Issue Focus: Anthrax and Dental Practice[13]; Issue Focus: Severe Acute Respiratory Syndrome: SARS and the Dental Office.[14]** http://www.osap.org/index.cfm
I. PERSONNEL HEALTH ELEMENTS OF AN INFECTION PREVENTION AND CONTROL PROGRAM				
A. General Recommendations				
1. Develop a written health program for DHCP that includes policies, procedures, and guidelines for education and training; immunizations; exposure prevention and post exposure management; medical conditions, work-related illness, and associated work restrictions; contact dermatitis and latex hypersensitivity; and maintenance of records, data management, and confidentiality. Supporting evidence: 1B	A written office infection prevention and control program should be developed to maintain and improve the health of all DHCP including a manual of policies, procedures and practices, identification of an IPC officer, guidelines for education and training, immunizations, exposure prevention and post exposure management, special considerations i.e. medical conditions, latex allergies, maintenance of records, maintenance of equipment. Supporting evidence: IPC-02-01 CDC Guidelines for IC in Dental Health-Care Settings - 2003	Same as CDC document.		
2. Establish referral arrangements with qualified health care professionals to ensure prompt and appropriate provision of preventive services, occupationally related medical services, and post exposure management with medical follow-up. Supporting evidence: 1B, 1C	Identify referral arrangements with IPC services from external health care facilities and providers prior to exposure. Supporting evidence: IPC-02-01 CDC Guidelines for IC in Dental Health-Care Settings - 2003	Same as CDC document.		
B. Education and Training				
1. Provide DHCP 1) on initial employment, 2) when new tasks or procedures affect the employee's occupational exposure, and 3) at a minimum, annually, with education and training regarding occupational exposure to potentially infectious agents and infection-control procedures/protocols appropriate for and specific to their assigned duties. Supporting evidence: 1B, 1C	DHCP should receive infection-control training upon hire, when given new tasks /procedures, and annually. Training should include: exposure risks, prevention strategies and IC policies and procedures, how to manage work-related illness and injuries, including post exposure prophylaxis, work restrictions for the exposure or infection. Supporting evidence: IPC-02-02	Chapter 2, B 1. Same as CDC document.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
2. Provide educational information appropriate in content and vocabulary to the educational level, literacy, and language of DHCP. Supporting evidence: 1B, 1C	Educational materials should be appropriate for the DHCP's educational level, literacy and language, as well as consistent with existing federal/provincial/municipal regulations. Supporting evidence: PC-02-02	Chapter 2, B 2. Same as CDC document.		
Provide training for DHCP who perform tasks likely to result in occupational exposure to infectious agents that includes: a) a description of the exposure risks; b) a review of prevention strategies and infection-control policies and procedures; c) discussion regarding how to manage work-related illness and injuries, including post exposure prophylaxis; d) review of work restrictions for the exposure.		Same as CDC and provide training for DHCP who perform tasks likely to result in occupational exposure to infectious agents that includes: a) description of the exposure risks; b) review of prevention strategies and infection-control policies and procedures; c) discussion regarding how to manage work-related illness and injuries, including post exposure prophylaxis; d) review of work restrictions if exposed to or infected with certain pathogens.		
Inclusion of DHCP with minimal exposure risks (e.g. administrative employees) in educational and training programs might enhance facility wide understanding on infection control principles and the importance of the program.		Provide newcomer's orientation training for all DHCP, including administrative employees.		
		For a period of 3 years, maintain training records documenting each training session provided by the dental service in accordance with current OSHA and medical treatment facility (MTF) guidelines.		
C. Immunization Programs				
1. Develop a written immunization policy, including a list of required and recommended immunizations, including Hep.B, Influenza, measles, mumps, rubella, varicella-zoster. Supporting evidence: The Advisory Committee on Immunization Practices (ACIP) provides national guidelines for immunization of HCP, which includes HDCP. Supporting evidence: 1B	DHCP should be immunized against: Hep.B, measles, mumps, rubella, varicella, influenza. IPC-02-04 Following Hep.B vaccination, if the anti-HBs is <10mIU/mL a second vaccine should be completed and if this occurs again, following a third round of vaccination then testing for HBs AG should be completed. Those with HBs AG-negative are susceptible to HBV infection and should obtain prophylaxis. Supporting evidence: IPC-02-03 DHCP APIC position paper and CDC APIC recommendations IPC-02-04 CDC documents 1987, 1989, 1999, 2001.	Ensure DHCP receive all appropriate immunizations (e.g. varicella, measles, mumps, rubella, influenza) based on internal policies as well as DHCP's medical history and risk for occupational exposure.	Current vaccinations against tetanus, Hep.B, Hep.A, rubella, measles, mumps, polio, tetanus/diphtheria and influenza. Baseline testing for tuberculosis for new OHP. Testing may be required following a suspected exposure. Post Hep.B vaccination serology performed at recommended intervals to ensure continued immunity. (Immunization schedule can be found at CFHS Policy and Guidance 4400-40) Civilian staff should be encouraged to receive the recommended immunizations.	
		Offer the HBV vaccination series to all DHCP with potential occupational exposure to blood or Other Potentially Infectious Material. (OPIM). Follow U.S. Public Health Service/CDC recommendations for Hep.B vaccination, serologic testing, follow-up and booster dosing. Provide employees appropriate education regarding the risks of HBV transmission and have employees who decline the vaccination sign a declination form.		
2. Refer DHCP to a prearranged qualified healthcare professional or own health care professional. Supporting evidence: 1B				

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
D. Exposure Prevention and Post Exposure Management				
1. Develop a comprehensive post exposure management and medical follow-up program. a. Include policies and procedures for prompt reporting, evaluation, counseling, treatment, and medical follow-up of occupational exposures. (1B, 1C). b. Establish mechanisms for referral to a qualified health care professional for medical evaluation and follow-up. (1B). c. Conduct a baseline TST, preferably by using a two-step test, for all DHCP who might have contact with persons with suspected or confirmed infectious TB, regardless of the risk classification of the setting.	For prevention use Standard precautions (PPE - gloves, masks, protective eyewear or face shields and protective clothing), engineering controls (e.g. needle guards, self-sheathing needles, shielded burs, aspirating anesthetic syringes), work-practice controls (extreme caution in passing sharps, remove burs before handpiece, not using fingers in tissue retraction or palpation during suturing and administration of anesthesia, remove sharps from instrument tray before cleaning, place disposable syringes, needles, scalpel blades in puncture-resistant containers, do not bend or manipulate needles by hand or point them towards the OHCP's body, re-cap needles as soon as possible after use, using a one-handed scoop technique- before removing the needles from the syringe for disposal. If the same needle is used for multiple injections, needle should be re-caped in between use. Use extreme caution when passing contaminated sharps. Supporting evidence: IPC-02-04 CDC. Public Health Service guidelines for the management of occupational exposures to HBV, HCV and HIV and recommendations for postexposure prophylaxis, MMWR 2001. CDC Guidelines for prevention of transmission of human immunodeficiency virus and Hep.B virus to health care and public-safety workers: a response to P.L. 100-607. The Health Omnibus Programs Extension Act of 1988. MMWR 1989;38(no. S6). CDC NIOSH. Selecting, evaluating and using sharps disposal containers. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC NIOSH, 1998. DHHW publication. NIOSH 97-111. CDC NIOSH alert: Preventing needlestick injuries in health care settings. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC, NIOSH 1999.	Same as CDC document 1a. and 1b. But not c.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
	Percutaneous injury - assess injury; administer first-aid; wash the area with antimicrobial soap and water. Flush eye, mouth or nose mucosa with water. Report injury to the Office Infection Prevention and Control officer, who will document the injury and contact the appropriate health care professional for a referral. Documentation should include exposed persons medical history, procedure being performed, extent of the exposure, and follow-up-care. Supporting evidence: IPC-02-05 CDC, Updated U.S. Public health Service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for post exposure prophylaxis. MMWR 2001;50(RR-11).		Guidelines for personnel with acquired disease: a. dermatitis - cover dermatitis with occlusive bandages, and wear gloves b. Immuno-compromised staff - may be at increased risk of acquiring or have more severe consequences from acquiring infection from clients. These staff may also be at risk of shedding viruses. Therefore tailor job descriptions and potential exposures accordingly.	OSAP Position Paper: Percutaneous Injury Prevention Recommendations: Communicate the importance of prevention and management of PI to all OHP. Train employees in the safe handling of instruments and devices. Review procedures and consider devices (as they become commercially available) that may reduce the risk of PI. Seek the input of non-managerial members of the clinical dental team in selecting appropriate and effective safety devices for the practice. Manage all injuries as indicated by OSHA regulations and U.S. Public Health Service Recommendations; Comply with all OSHA requirements for documentation; convey the needs of the end users - the dental team - to the research, development, and manufacturing sectors. Conclusions: OSAP encourages all dental practices to establish a written, comprehensive program that includes strategies to avoid occupational exposures to bloodborne pathogens. OSAP encourages the use of appropriate, effective devices that isolate sharps or provide a non-sharp alternative. OSAP discourages inappropriate manipulation of sharps by hand. OSAP encourages research into risk assessment of specific instruments and devices, prioritization of risk, product evaluation, and other mechanisms for OHPs to assess the safety of devices. OSAP reminds OHPs that products have an intended use and that manufacturer's instructions must be reviewed and followed. In the event of product failure, an immediate report should be filed with the Food and Drug Administration's Medwatch program.

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
E. Medical Conditions, Work-Related Illness, and Work Restrictions				
1. Develop and have readily available to all DHCP comprehensive written policies regarding work restriction and exclusion that include a statement of authority defining who can implement such policies. Supporting evidence: 1B		Develop work restriction and exclusion policies for DHCP with certain illnesses or infection.	Guidelines for some commonly acquired diseases: a. common cold-practice hand hygiene after contact with nasal secretions. Avoid seeing immuno-compromised clients. Wear a surgical mask and wash hands frequently. b. influenza - refrain from working. c. herpes simplex virus infections 1. cold sore - if possible keep the lesion covered. 2. herpetic whitlow (herpetic finger infection) - no client contact until the lesion is resolved. 3. Shingles - a susceptible client exposed to a health care worker with shingles may get chickenpox. Cover the lesions and practice good hand washing techniques. Don't work with high-risk clients (newborns, immuno-compromised clients) until the lesions are crusted. d. Enteric infection - excluded from work. e. Tuberculosis - excluded from work, until 3 consecutive sputum specimens have negative results.	
2. Develop policies for work restriction and exclusion that encourage DHCP to seek appropriate preventive and curative care and report their illnesses, medical conditions, or treatments that can render them more susceptible to opportunistic infection or exposures; do not penalize DHCP with loss of wages, benefits, or job status. Supporting evidence: 1B		Encourage DHCP to seek appropriate preventive and curative care and report their illnesses or medical conditions. Follow MTF guidance and recommendation in the CDC Guideline for Infection Control in Healthcare Personnel (www.cdc.gov/ncidod/dhqp/guidelines.html)		
3. Develop policies and procedures for evaluation, diagnosis, and management of DHCP with suspected or known occupational contact dermatitis. Supporting evidence: 1B				
4. Seek definitive diagnosis by a qualified health care professional for any DHCP with suspected latex allergy to carefully determine its specific etiology and appropriate treatment as well as work restrictions and accommodations. Supporting evidence: 1B				
F. Records Maintenance, Data Management, and Confidentiality				
1. Establish and maintain confidential medical records (e.g. immunization records and documentation of tests received as a result of occupational exposure) for all DHCP. Supporting evidence: 1B, 1C				
2. Ensure that the practice complies with all applicable federal, state, and local laws regarding medical record-keeping and confidentiality. Supporting evidence: 1C				
II. PREVENTING TRANSMISSION OF BLOODBORNE PATHOGENS				
A. HBV Vaccination				
		Ensure DHCP receive all appropriate immunizations (e.g. varicella, measles, mumps, rubella, influenza) based on USAF policy, the latest recommendations from the Advisory Committee on Immunization Practices (ACIP) and the HICPAC as well as their medical history and risk for occupational exposure.		
1. Offer the HBV vaccination series to all DHCP with potential occupational exposure to blood or OPIM. Supporting evidence: 1A, 1C		Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
2. Always follow U.S. Public Health Service/CDC recommendations for Hep.B vaccination, serologic testing, follow-up, and booster dosing. Supporting evidence: 1A, 1C		Same as CDC.		
3. Test DHCP for anti-HBs 1-2 months after completion of the 3-dose vaccination series. Supporting evidence: 1C, 1B				
4. DHCP should complete a second 3-dose vaccine series or be evaluated to determine if they are HBsAg-positive if no antibody response occurs to the primary vaccine series. Supporting evidence: 1A, 1C				
5. Retest for anti-HBs at the completion of the second vaccine series. If no response to the second 3-dose series occurs, nonresponders should be tested for HBsAg. Supporting evidence: 1C				
6. Counsel non responders to vaccination who are HBsAg-negative regarding their susceptibility to HBV infection and precautions to take. Supporting evidence: 1A, 1C				
7. Provide employees appropriate education regarding the risks of HBV transmission and the availability of the vaccine. Employees who decline the vaccination should sign a declination form to be kept on file with the employer. Supporting evidence: 1C		Same as CDC. Have employees who decline the Hep.B vaccination sign a declination form using the wording found in the appendix A of the OSHA bloodborne pathogens standard [1910.1030] to be kept on file with the employer.		
B. Preventing Exposures to Blood and OPIM				
a. Use standard precautions (OSHA's bloodborne pathogen standard retains the term universal precautions) for all patient encounters. Supporting evidence: 1A, 1C		Same as CDC.		
b. Consider sharp items (e.g. needles, scalers, burs, lab knives, and wires) that are contaminated with patient blood and saliva as potentially infective and establish engineering controls and work practices to prevent injuries. Supporting evidence: 1B, 1C		Same as CDC.		
c. Implement a written, comprehensive program designed to minimize and manage DHCP exposures to blood and body fluids. Supporting evidence: 1B, 1C		Same as CDC.		
C. Engineering and Work-Practice Controls				
a. Identify, evaluate, and select devices with engineered safety features at least annually and as they become available on the market e.g. safer anesthetic syringes, blunt suture needle, retractable scalpel, or needleless IV systems. Supporting evidence: 1C		The Dental Infection Control Officer (ICO) must be knowledgeable about available devices, e.g. safety anesthetic syringes, be able to discuss the advantages/disadvantages of each device the with the Medical Treatment Facility (MTF)	Controls include the following: Remove burs immediately after use, don't use fingers in tissue retraction during suturing or administration of anesthesia, and minimize potentially uncontrolled movements of instruments such as scalers or laboratory knives.	
b. Place used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers located as close as feasible to the area in which the items are used. Supporting evidence: 1A, 1C		Same as CDC.	Dispose of sharp instruments by placing them directly into a designated, puncture proof disposal container.	
c. Do not recap used needles by using both hands or any other technique that involves directing the point of a needle toward any part of the body. Do not bend, break, or remove needles before disposal. Supporting evidence: 1A, 1C		Do not pass syringes with unsheathed needles. Same as CDC.	Never re-cap needles, manipulate by using both hands, or point toward your body.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
d. Use either a one-handed scoop technique or a mechanical device designed for holding the needle cap when recapping needles (e.g. between multiple injections and before removing from a nondisposable aspirating syringe). Supporting evidence: 1A, 1C		Same as CDC.	Use the following methods: one hand scoop, hold the sheath with a hemostat, use a syringe stand or use safety syringes. Do not bend or break used needles. Re-cap needles on non-disposable aspirating syringes prior to their removal, for multiple injections, recap the needle between injections. Avoid passing a syringe with an unsheathed needle.	
D. Post Exposure Management and Prophylaxis				
a. Follow CDC recommendations after percutaneous, mucous membrane, or nonintact skin exposure to blood or OPIM. Report all exposures to blood or OPIM as soon as possible, because certain interventions have to be initiated promptly to be effective. Policy should be consistent with OSHA and current PHS recommendations. Supporting evidence: 1A, 1C	Post exposure Prophylaxis (PEP) - should be consistent with the current infection prevention and control guidelines recommended by the Public Health Agency of Canada or the U.S. Public Health Service. Supporting evidence: IPC-02-07 CDC, Updated U.S. Public Health Service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for post exposure prophylaxis. MMWR 2001;50(RR-11). PHAC Public Health Agency of Canada: An integrated protocol to manage health care workers exposed to bloodborne pathogens.1997;23S2	Same as CDC. Promptly report, evaluate and document any occupational exposure incidents to blood or OPIM (including saliva, regardless of whether blood is visible). A qualified health care professional should evaluate any occupational exposure incident to blood or OPIM. After each exposure, review the circumstances surrounding the injury and the postexposure management plan to ensure the plan's effectiveness. Provide education and training and implement practice changes as appropriate.	Injured person should immediately report the incident and seek medical attention. For HIV prophylaxis to be effective treatment must begin within 2 hours of exposure. Remove contaminated clothing. Wash affected area with soap and water. Flush eyes, nose or mouth with water. OHP should see a medical provider to discuss risks and interventions. If the client who is the known source of the blood exposure is present, the person should be approached to provide a blood sample to be checked for bloodborne pathogens. The name of the injured worker should not be entered in the client's chart.	
			OHP who are PSAC employees should submit a Workers' Compensation Form.	
III. HAND HYGIENE				
A. General Considerations				
1. Perform hand hygiene with either a non antimicrobial or antimicrobial soap and water when hands are visibly dirty or contaminated with blood or OPIM. If hands are not visibly soiled, an alcohol-based hand rub can also be used. Follow the manufacturer's instructions. After using dry alcohol-based hand rub ensure hands are dried before glovving as hands still wet with alcohol based products can increase the risk of glove perforation. Supporting evidence: 1A	Hands of OHP that contact clients should be washed: at beginning of day, after eating, after using the washroom, when hands become contaminated. Wash hands with anti-microbial soap with persistent activity (e.g. chlorhexidine, choroxylenol, octenidine, or triclosan), cool or warm (not hot) water, and single use towels. Thoroughly dry hands.	Same as CDC.	Components of good hand washing include using an adequate amount of soap, rubbing the hands together to create some friction, and rinsing under running water. There is mixed evidence regarding the efficacy of air hand dryers. Controlled trials have not documented decreased infection with the use of an antiseptic agent over plain soap for routine hand washing in the general health care setting. A few studies suggest that antiseptic agents may be preferable if there is a possibility of encountering antimicrobial-resistant organisms, such as in intensive care units; in the presence of known antimicrobial-resistant organisms; and under conditions of heavy microbial soiling. See Appendix B for "Characteristics of Antiseptic Agents". Several studies show efficacy of waterless hand scrubs compared to hand washing with soap and water or with chlorhexidine. Further studies are needed to determine efficacy of waterless hand scrubs in the presence of large amounts of organic matter. Wash hands with antiseptic agent for the following: a. heavy microbial soiling, e.g. in the presence of infection, b. prior to performing invasive procedures, c. before contact with immune deficient clients, d. before and after direct contact with clients who have antimicrobial-resistant organisms. The absolute indications for, and the ideal frequency of hand washing have not been well studied. See Annex C for hand washing technique. Avoid potential microbial contamination by splashing of clothing, other skin surfaces or inanimate items during washing.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
2. Indications for hand hygiene include:	For hand antisepsis use an alcohol hand-rub, between clients and after removing gloves. Alcohol hand-rub must be dry when applying gloves, as the alcohol can cause glove material degradation and loss of glove integrity.	Same as CDC.	Hand washing with waterless/ alcohol-based agents is equivalent to hand washing with soap and water. If heavy microbial soiling, hands must be washed with soap and water first. Hands must be dry before applying alcohol-based agent.	
a. When hands are visibly soiled, after barehanded touching of inanimate objects likely to be contaminated by blood, saliva, or respiratory secretions. (1A, 1C). b. After barehanded touching of inanimate objects likely to be contaminated by blood, saliva, or respiratory secretions. (1A, 1C).		Same as CDC.	Hands must be washed: 1. before and after treating each client (before glove placement and after glove removal) and before leaving any client-care, laboratory or instrument processing area or after any other situation or procedure in which microbial of blood contamination of hands is likely. 2. when hands are visibly soiled. 3. before preparing, handling, serving or eating food, and 4. after personal body functions, such as using the toilet or blowing one's nose. Plain soap is indicated for washing hands soiled with dirt, blood or other organic material. It will remove most transient organisms.	
c. before and after treating each patient. Supporting evidence 1B		Same as CDC.		
d. before donning gloves. Supporting evidence: 1B		Same as CDC.		
e. immediately after removing gloves. Supporting evidence 1B, 1C		Same as CDC.		
3. For oral surgical procedures, perform surgical hand antisepsis before donning sterile surgeon's gloves. Follow the manufacturer's instructions by using either an antimicrobial soap and water, or soap and water followed by drying hands and application of an alcohol-based surgical hand-scrub product with persistent activity. Supporting evidence: 1B		Same as CDC.	Surgical Scrub: Follow the protocol of the institution where the surgical scrub is required. Generally no reason to perform this in a dental clinic.	
4. Store liquid hand-care products in either disposable closed containers or closed containers that can be washed and dried before refilling. Do not add soap or lotion to (i.e., top off) a partially empty dispenser. Supporting evidence: 1A		Same as CDC.		
B. Special Considerations for Hand Hygiene and Glove Use				
1. Soap should not be added to partially empty dispenser due to potential bacterial contamination.		Lotions should be dispensed in small, individual-use containers or pump dispensers that are not opened or refilled to reduce contaminants and bacterial growth.	Sinks for hand washing should not be used for any other purpose. At least one sink per dental operatory. To prevent decontaminating hands, use sink with hand-foot, wrist or knee operated handles, electric eye, or make use of single use towels to turn off faucets. Use non-refillable lotion containers to avoid product contamination. Liquid hand wash products should be stored in closed containers and if the container is reusable, then wash and dry it thoroughly before refilling.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
2. Consider the compatibility of lotion and antiseptic products and the effect of petroleum or other oil emollients on the integrity of gloves during product selection and glove use. Supporting evidence: 1B	Consider emollient hand lotions to prevent hand irritation and dermatitis. Consult lotion manufacturers to ensure products to ensure no negative interaction between lotions, antimicrobial soaps or alcohol hand-rubs, and other dental materials e.g. chlorhexidine hand hygiene products should be used with anionic hand lotions to avoid loss in persistence of the antimicrobial action of the solution. Supporting evidence: IPC-02-08 CDC. Guideline for hand hygiene in health care settings: recommendations of the HICPAC and the HICPAAC/SHEA/APIC/IDSA hand Hygiene Task Force. MMWR 2002/51(RR-16).		Consider the compatibility between lotion and antiseptic products and potential for lotion's effect on glove integrity.	
3. Keep fingernails short with smooth, filed edges to allow thorough cleaning and prevent glove tears .	Keep fingernails short to thoroughly clean underneath and prevent glove tears. Avoid artificial nails. Nail polish without chips is acceptable.	Same as CDC.		
4. Do not wear artificial fingernails or extenders when having direct contact with patients at high risk e.g. those in intensive care units or operating rooms. Supporting evidence: 1A				
5. Use of artificial fingernails is usually not recommended. Supporting evidence: II		Same as CDC.		
6. Do not wear hand or nail jewelry if it makes donning gloves more difficult or compromises the fit and integrity of the glove.	Avoid jewelry as it may prevent hand hygiene, make donning gloves difficult and can cause tearing of gloves. Alternately, arm and wrist jewelry and watches should be covered by the cuffs and long sleeves of protective clothing.	Same as CDC.		
Chipped nail polish can harbour added bacteria.		Unchipped nail polish on short natural nails is acceptable. All cases of hand dermatitis should be evaluated for treatment and follow-up. If open sores or weeping dermatitis exists, refrain from direct patient contact and handling of patient-care equipment until the condition is resolved.	Consider the use of hair covers and do not allow hair to contact the client.	
IV. PERSONAL PROTECTIVE EQUIPMENT (PPE)				
A. Masks, Protective Eyewear, and Face Shields				
1. Wear a surgical mask and eye protection with solid side shields or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures likely to generate splashing or spattering of blood or other body fluids. Protective eyewear for patients shields their eyes from spatter or debris generated during dental procedures. Supporting evidence: 1B, 1C	Wear a mask during procedures which produce aerosol, or splashes, sprays, or spatter of blood, saliva other body fluids, or water contaminated with blood, saliva or other body fluids. Ensure mask fits tightly over nose and mouth. DHCP should wear protective eyewear with solid side shields or a face shield a face shield should be worn during procedures likely to generate splashes, sprays or spatter of blood, saliva, other body fluids, or water contaminated with blood, saliva or other body fluids may be produced. Eye protection for patients should also be used to protect their eyes from spatter of debris. Supporting evidence: IPC-03-04 CDC. NIOSH. TB respiratory protection program in health care facilities: administrator's guide. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC, NIOSH 99-143. CDC Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities, 1994. MMWR 1994;43(RR-13).	Wear scrub suits during patient care and instrument processing. Supplement scrub suits with PPE when exposure to blood or OPIM is reasonably anticipated. Wear a surgical mask and eye protection with solid side shields (e.g. glasses, face shield) to protect mucous membranes of the eyes, nose, and mouth during procedures likely to generate splashing or spattering of blood or other body fluids.	Eye protection is essential. Employ eyeglasses, goggles or a face shield to deflect the splatter of blood, saliva and airborne debris. Every day eyewear is not sufficient. Clients in the supine position should also wear protective eyewear. For clients, everyday corrective lenses provide adequate protection. Remove masks when leaving the dental operatory or laboratory.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
2. Change masks between patients or during patient treatment if the mask becomes wet. Supporting evidence: 1B	Change masks when they become contaminated or wet (from splash, spray or spatter), or from the OHP's exhaled moist air. Supporting evidence: IPC-03-04 CDC. NIOSH. TB respiratory protection program in health care facilities: administrator's guide. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC, NIOSH 99-143. CDC Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities, 1994. MMWR 1994;43(RR-13).	Same as CDC.	Change masks between patients and if the mask becomes saturated with moisture. Wash hands after repositioning a mask, unless a gloved hand contacted only the mask. Remove a mask by holding onto the ties and the side of the mask.	
3. Clean with soap and water, or if visibly soiled, clean and disinfect reusable facial protective equipment (e.g. clinician and patient protective eyewear or face shields) between patients. Supporting evidence: II	Properly dispose of single use masks. Supporting evidence: IPC-03-04 CDC. NIOSH. TB respiratory protection program in health care facilities: administrator's guide. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC, national Institute for Occupational Safety and Health, 1999. DHHS publication no. (NIOSH) 99-143. CDC Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities, 1994. MMWR 1994;43(RR-13).	Same as CDC.		
Surgical masks should be NIOSH certified (e.g. N95 respirators).	The surgical mask should have more than 95% filtration efficiency for particles 3-5 microns. Supporting evidence: IPC-03-04 CDC. NIOSH. TB respiratory protection program in health care facilities: administrator's guide. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC, NIOSH, 1999. DHHS publication no. (NIOSH) 99-143. CDC Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities, 1994. MMWR 1994;43(RR-13).			
When respirators are used in treating patients with diseases requiring airborne transmission precautions (e.g. TB) they should be used in the context of a complete respiratory protection program (e.g. test fitting).	When respiratory infection isolation precautions are necessary (e.g.. Clients with active tuberculosis) wear a particulate-filter respirator or mask (e.g. N95, N99 or N100). The use of these masks should be accompanied by training and fit-testing of the respirator or mask. Supporting evidence: IPC-03-04 CDC. NIOSH. TB respiratory protection program in health care facilities: administrator's guide. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC, NIOSH 99-143. CDC Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities, 1994. MMWR 1994;43(RR-13).		Masks should have small particle filtration efficiency ≥95% filtration of 3.0 to 3.5 micron particles). Public health authorities may mandate the use of N-95 masks, which must be fit tested and fit checked each time the mask is put on.	
	An eye-wash station should be available and staff training on location, function and indications for use. Supporting evidence: IPC-03-04 CDC. NIOSH. TB respiratory protection program in health care facilities: administrator's guide. Cincinnati, OH: US Department of Health and Human Services, Public Health Service, CDC, NIOSH 99-143. CDC Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities, 1994. MMWR 1994;43(RR-13).			

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
B. Protective Clothing				
	Use dental rubber dams and high volume/high velocity suction whenever the creation of droplets, spatter, spray and aerosol occurs. Supporting evidence: IPC-03-01 CDC Guidelines for Infection Control In Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).		Employ a rubber dam whenever possible to reduce exposure of the dental personnel to microorganisms.	
Protective clothing and equipment should be worn e.g. reusable or disposable gown, laboratory coat, or uniform that covers personal clothing and skin (e.g. forearms) likely to be soiled with blood, saliva, or OPIM. Supporting evidence: 1B,1C	Re-usable PPE designed for re-use can be washed with soap and water. Infected PPE's can be disinfected according to the manufacturer's directions. Disposable PPE items should be discarded following use. Supporting evidence: IPC-03-01 CDC Guidelines for Infection Control In Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Wear protective clothing (e.g. long-sleeved reusable or disposable gown, clinic jacket) that covers clothing and skin (e.g. forearms) likely to be soiled with blood, saliva or OPIM. PPE does not have to be fluid impervious or fluid resistant to meet OSHA standards, but must prevent contamination of clothing or skin. Procedures likely to result in spattering of blood or OPIM that require the use of long-sleeved protective clothing include but are not limited to, the following: the use of high-or low-speed handpieces or sonic or ultrasonic scalers; manipulation with sharp cutting instruments during periodontal and prophylaxis treatments; spraying water and air into a patient's mouth; oral surgical procedures; and manual instrument cleaning.		
2. Change protective clothing if visibly soiled; change immediately or as soon as feasible if penetrated by blood or other potentially infectious fluids. OSHA bloodborne pathogens standards require sleeves to be long enough to protect forearms. Supporting evidence: 1B, 1C	Protective clothing including gowns and lab-coasts are meant to be worn over uniforms, scrubs or street clothing. If short sleeve protective clothing is used, hand hygiene protocols should extend up the arms, past the wrists. Change protective clothing at least daily, or if it becomes visibly soiled or significantly contaminated, as soon as feasible if penetrated by blood or potentially infectious fluids. Supporting evidence: IPC-03-06	Same as CDC.	All OHP must wear a reusable or disposable uniform, which must remain in the clinic, where access to separate, external laundering facilities are available. Do not launder with family wash. For personnel with breaks in the skin integrity, long sleeves gowns should be provided and the gloves should cover the cuffs.	
3. Remove barrier protection, including gloves, mask, eyewear, and gown before departing work area, e.g. dental patient care, instrument processing, or laboratory areas. Supporting evidence: 1C	Remove PPE prior to leaving the client care area. Supporting evidence: IPC-03-06	Same as CDC.		
C. Gloves				
		Wear medical gloves when a potential exists for contacting blood, saliva, OPIM, or mucous membranes.		
2. Wear a new pair of medical gloves for each patient, remove them promptly after use, and wash hands immediately to avoid transfer of microorganisms to other patients or environments. Supporting evidence: 1B	Gloves should be discarded after each client, or if the gloves are torn or punctured. Perform appropriate hand hygiene before applying and after removing gloves. Supporting evidence: IPC-03-02 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.	Wear gloves to treat all patients when hand contact with blood, saliva, mucous membranes or blood-contaminated objects or surfaces is anticipated. Discard gloves between patients. Gloves are not a substitute for hand washing.	
3. Remove gloves that are torn, cut, or punctured as soon as feasible and wash hands before regloving. Supporting evidence: 1B, 1C	Monitor integrity of gloves and replace as soon as possible if there is a manufacturing defect, puncture or tear. Supporting evidence: ICP-03-02 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
4. Do not wash surgeon or patient's examination gloves before use or wash, disinfect, or sterilize gloves for reuse. Supporting evidence: 1B, 1C	Patient-examining gloves and sterile surgical gloves are for one client only and are discarded after use. Gloves should not be washed, as soaps, and alcohols can compromise the surface of latex and synthetic materials, leading to loss of integrity. Micro-porosities in glove material can lead to wicking of water, blood or saliva to the hand surface. Supporting evidence: IPC-03-02 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		
5. Ensure that appropriate gloves in the correct size are readily accessible. Supporting evidence: 1C		Same as CDC.		
6. Use appropriate gloves (e.g. puncture- and chemical-resistant utility gloves) when cleaning instruments and performing housekeeping tasks involving contact with blood or OPIM. Supporting evidence: 1B, 1C	Glove selection is dependent upon the task performed. Patient examining gloves are used for routine client care. Sterile surgical gloves are used with an open surgical wound. Utility gloves are used for cleaning and disinfection procedures and should be puncture and chemical resistant. They should be disinfected or sterilized at the end of the day. Supporting evidence: IPC-03-02 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.	Use heavy-duty utility gloves, for clean up and disinfection; wash them in disinfectant soap and reuse.	
7. Consult with glove manufacturers regarding the chemical compatibility of glove material and dental materials used. Supporting evidence: II	Do not expose gloves to heat sources, such as x-ray unit controllers, lasers, fans, electrical generators, suction machines or motors. Supporting evidence: IPC-03-02 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		
			Health Canada recommends purchasing gloves with the Canadian General Standards Board (CGSB) certification mark.	
			There is no evidence based documentation of a latex/non-latex glove type offering better protection than another.	
D. Sterile Surgeon's Gloves and Double Gloving During Oral Surgical Procedures				
		Wear sterile surgeon's gloves when performing oral surgical procedures.		
2. No recommendation is offered regarding the effectiveness of wearing two pairs of gloves to prevent disease transmission during oral surgical procedures. The majority of studies among HCP and DHCP have demonstrated a lower frequency of inner glove perforation and visible blood on the surgeon's hands when double gloves are worn; however, the effectiveness of wearing two pairs of gloves in preventing disease transmission has not been demonstrated. Supporting evidence: Unresolved issue	Double-gloving may be used for procedures involving the handling of multiple sharp metal instruments or during longer procedures. Double gloving should be procedure specific, not client specific. It may affect manual dexterity and tactile sensitivity. Supporting evidence: IPC-03-02 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
V. CONTACT DERMITITIS AND LATEX HYPER-SENSITIVITY				
A. General Recommendations				
1. Educate DHCP regarding the signs, symptoms, and diagnoses of skin reactions associated with frequent hand hygiene and glove use. When powdered gloves are worn more latex protein reaches the skin and powder particles become aerosolyzed and can be inhaled. Supporting evidence: 1B		Same as CDC. Develop policies and procedures for evaluation, diagnosis, and management of DHCP with suspected or known latex allergy or occupational contact dermatitis. Seek definitive diagnosis by a qualified health care professional for any DHCP with suspected latex allergy to carefully determine its specific etiology and appropriate treatment as well as work restrictions and accommodations.	Latex products are being removed on a gradual basis from the clinical environment. Powder-free latex gloves are strongly encouraged due to the dermatitis caused by the powder. OHP who have demonstrated an allergy or sensitivity to latex shall be provided with a latex-free alternative. OHP shall utilize latex-free gloves when treating clients with a history of latex sensitivity. It is imperative that sensitivities to latex products be investigated an accurate diagnosis made. A supply of latex free dams shall be maintained for clients with sensitivity to latex.	
2. Screen all patients for latex allergy (e.g. take health history and refer for medical consultation when latex allergy is suspected). Supporting evidence: 1B	Medical histories for clients and OHP should include questions relating to possible latex allergy, predisposing conditions for latex allergy, including previous history of allergies, a history of early latex exposure or related allergies to certain fruits and nuts. Supporting evidence: IPC-03-03 CDC. NIOSH Alert: preventing allergic reactions to natural rubber latex in the workplace. Cincinnati, OH: US Department of health and Human Services, Public Health Service, CDC, NIOSH 1997.	If using latex gloves, use reduced protein, powder-free gloves to reduce exposure to latex allergens.	Clients at risk of anaphylactic shock due to a documented latex allergy shall be referred to a civilian latex-free practice. If treated in a DCFDS facility: 1. they should be the first client of the day. 2. use no latex in the facility until they have left.	
3. Ensure a latex-safe environment for patients and DHCP with latex allergy. Dental patients with a history of latex allergy can be at risk from dental products e.g. prophylaxis cups, rubber dams, ortho elastics and medication vials.	Clients with latex allergy (type 1 immunologic reactions which are IgE antibody mediated and result in respiratory and anaphylactic reactions) should be treated in an environment where contact with latex proteins, either directly or airborne, is kept as low as reasonably achievable (ALARA). Remove or cover latex-containing materials or devices from the treatment area. The following precautions should also be taken: the operatory and the sterilization of instruments should be done by an OHP wearing only non-latex gloves. Instruments should not come in contact with any other instruments that may have contacted latex. Schedule appointments at the beginning of the day to reduce exposure to airborne allergens. Supporting evidence: IPC-03-03 CDC NIOSH Alert: preventing allergic reactions to natural rubber latex in the workplace. Cincinnati, OH: US Department of health and Human Services, Public health Service, CDC, NIOSH 1997.	Same as CDC.	3. "No latex" includes latex in the following items: gloves, masks with latex straps, local anesthetic carpules, prophy cups.	
4. Have emergency treatment kits with latex-free products available at all times. Supporting evidence: II	Keep latex-free emergency treatment kits available. Supporting evidence: IPC-03-03 CDC. NIOSH Alert: preventing allergic reactions to natural rubber latex in the workplace. Cincinnati, OH: US Department of health and Human Services, Public health Service, CDC, NIOSH, 1997.	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
VI. STERILIZATION AND DISINFECTION OF PATIENT CARE ITEMS				
A. General Recommendations				
1. Use only FDA-cleared medical devices for sterilization and follow the manufacturer's instructions for correct use. Supporting evidence: 1B		The following methods of heat sterilization are acceptable: steam autoclave (either gravity displacement or prevacuum type); unsaturated chemical vapor sterilizer (chemiclave); or dry heat sterilizers (either static or forced air). Assure that scheduled maintenance and calibration are performed on all decontamination and sterilization equipment according to manufacturer recommendations and MTF guidance.		
2. Clean and heat-sterilize critical dental instruments before each use. Supporting evidence: 1A	Critical care items are used to penetrate soft tissue or bone, and should be heat sterilized. Supporting evidence: IPC-04-01	Same as CDC.	Clean instruments prior to disinfection or sterilization to remove blood, saliva, tissue, and adherent dental materials, which act as barriers to disinfection/sterilization. Clean using manual scrubbing, ultrasonic cleaning, or by using an instrument washer.	
3. Clean and heat-sterilize semi critical items before each use. Supporting evidence: 1B	Semi critical care items only touch mucous membranes or non-intact skin. They should be heat sterilized, or if health-sensitive disinfected with high-level disinfection. Supporting evidence: IPC-04-01	Same as CDC.		
4. Allow packages to dry in the sterilizer before they are handled to avoid contamination. Supporting evidence: 1B				
5. Use of heat-stable semi critical alternatives is encouraged. Supporting evidence: 1B				
6. Reprocess heat-sensitive critical and semi critical instruments by using FDA-cleared sterilant/high-level disinfectants or an FDA-cleared low-temperature sterilization method (e.g. ethylene oxide). Follow manufacturer's instructions for use of chemical sterilants/high-level disinfectants. Supporting evidence: 1B	Low-temperature sterilization using ethylene oxide gas (ETO) may be used in larger health care facilities, such as hospitals, but the hazardous vapours produced, make it impractical for private practice settings.	Same as CDC. Using heat sensitive, semi critical items that must be processed with liquid chemical germicides is discouraged. Do not install ethylene oxide sterilization equipment in dental clinics.		
7. Single-use disposable instruments are acceptable alternatives if they are used only once and disposed of correctly. Supporting evidence: 1B, 1C		Single-use devices are for one patient only, and must be disposed of appropriately.		
		Do not use intermediate or low-level disinfectants intended for use on environmental surfaces to clean and disinfect dental instruments.		
8. Do not use liquid chemical sterilants/high-level disinfectants for environmental surface disinfection or as holding solutions. Supporting evidence: 1B, 1C		Same as CDC.	There are 4 classes of chemical disinfectants: chlorides, iodine, combination synthetic phenolics and glutaraldehydes. All of these disinfectants, except the glutaraldehydes, are acceptable for both surface and immersion disinfection. In some provinces (e.g. British Columbia) there are limits on workers' exposure to glutaraldehyde fumes. B.C. requires the use of fume hoods and extraction fans in health care settings using glutaraldehyde. Do not use alcohol, the quaternary ammonium compounds and simple or single phenols.	
9. Ensure that non critical patient-care items are barrier-protected or cleaned, or if visibly soiled, cleaned and disinfected after each use with an EPA-registered hospital disinfectant. If visibly contaminated with blood, use an EPA-registered hospital disinfectant with a tuberculocidal claim (i.e. intermediate level). Supporting evidence: 1B	Non critical care items contact only intact skin. These items can be barrier protected or cleaned and if contaminated by blood, saliva or other body fluid, cleaning followed by disinfection. Supporting evidence: IPC-04-01	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
10. Inform DHCP of all OSHA guidelines for exposure to chemical agents used for disinfection and sterilization. Using this report, identify areas and tasks that have potential for exposure. Supporting evidence: 1C		Same as CDC.		
		Clean, lubricate, and heat-sterilize all dental handpieces, including prophy angles and motors between patients.		
B. Instrument Processing Area				
2. Train DHCP to employ work practices that prevent contamination of clean areas. Supporting evidence: II		Same as CDC.		
C. Receiving, Cleaning, and Decontamination Work Area				
Process instruments in a designated central processing area. If manual cleaning is not performed immediately, place instruments in a puncture resistant container and soak with detergent, disinfectant/detergent or enzymatic cleaner.	Central processing areas should have clear sections for receiving, cleaning and decontamination; preparation and packaging; sterilization; storage of processed instruments (or storage in the operatory). Decontamination and cleaning should precede all disinfection and sterilization processes. Supporting evidence: IPC-04-02	Designate a central processing area. Divide the area physically, or at a minimum spatially, into distinct areas for receiving, cleaning, and decontamination; preparation and packaging; sterilization; and storage. Do not store sterile or clean instruments in an area where contaminated instruments are held or cleaned. Clean all visible blood and other contamination from instruments and devices before sterilization or disinfection. The use of holding solutions are optional, but should be considered to prevent hardening of bioburden.	Sorting and Soaking: If instruments and small items cannot be cleaned immediately, submerge in water and/or detergent. Heavy non immersible items should be wrapped in or covered with a wet towel.	
2. Use automated cleaning equipment (e.g. ultrasonic cleaner or washer-disinfector) to remove debris to improve cleaning effectiveness and decrease worker exposure to blood. Supporting evidence: 1B	An automated process for cleaning instruments (e.g. ultrasonic cleaner or washer-disinfector) is preferable to hand scrubbing to reduce risk of injury. Rinse instruments after cleaning to remove chemical or detergent residue. If cleaning is not done immediately, use a holding solution. Holding solutions with fixative and toxic natures should not be used (e.g. glutaraldehyde and high level disinfectants). Supporting evidence: IPC-04-02	Same as CDC.	The cleaning detergent must be compatible with the disinfection process. An enzymatic solution may be used. Combination low-level disinfectant-detergent products (germicidal detergents) can be used to clean items that do not require further disinfection or sterilization (e.g. intravenous IV poles, articulators). Rinse and dry after cleaning. Dental handpieces must be cleaned by hand or with specific devices designed for handpiece cleaning. Ultrasonic cleaning is usually more effective than manual scrubbing and decreases the likelihood of PI to staff. Instruments should be suspended in the ultra sonic cleaner and not placed on the bottom of the chamber floor. Follow instructions for the ultrasonic cleaner, including the appropriate detergents and test the cleaner once a month according to instructions. Instrument washers automatically wash, clean, rinse and dry instruments and they may also sanitize, disinfect and sterilize. They minimize handling and reduce the possibility of PI. Manual scrubbing is generally less effective than other cleaning methods and it jeopardizes worker safety. It should be reserved for items that remain visibly soiled after automated cleaning. Thorough rinsing is necessary. Drying prevents microbial growth. Inspect items for traces of organic soil, oil, grease and other matter prior to sterilization.	
3. Use work-practice controls that minimize contact with sharp instruments if manual cleaning is necessary (e.g. long-handled brush).				

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
4. Wear puncture- and chemical-resistant/heavy-duty utility gloves for instrument cleaning and decontamination procedures.	The following workplace controls should be used for instrument/device decontamination and operatory clean-up: - Wear puncture-resistant gloves. - Transport used instruments in a rigid or puncture-resistant container. - Use a long-handled brush for manual cleaning. - Use strainer -type basket to hold instruments and forceps to remove instruments from containers. - Wear PPE during instrument decontamination. Supporting evidence: IPC 04-02	Same as CDC.	Heavy rubber gloves should be worn and scrub instruments below the water surface to prevent aerosolization and splashing.	
5. Wear appropriate PPE (e.g. mask, protective eyewear, and gown) when splashing or spraying is anticipated during cleaning. Supporting evidence: 1C		Same as CDC.	Instrument cleaning and sterilization/disinfection staff must be properly trained, wear personal protective equipment, appropriate to the task, in order to protect themselves from exposure to pathogens and chemical. These employees should be immunized.	
		Minimize handling of loose contaminated instruments during transport to the instrument processing area.		
		Table-top ultrasonic cleaning equipment should be periodically tested according to manufacturer's instructions.		
D. Preparation and Packaging				
			All instruments that can withstand high heat should be heat sterilized. Glass bead sterilizers and microwave ovens are not acceptable for sterilization.	
2. Use a container system or wrapping compatible with the type of sterilization process used and that has received FDA clearance. Supporting evidence: 1B	For semi critical and critical instruments, inspect for cleanliness, wrap and place in containers designed to maintain sterility during storage. Immerse hinged instruments in a rust inhibitor and process opened and unlocked. Place a chemical indicator on the outside of instrument package. Use packaging materials specifically designed for the type of sterilization process used. Supporting evidence: IPC-04-02	Use an FDA-cleared container system or wrapping compatible with the type of sterilization process used.		
Items to be sterilized should be arranged to permit free circulation of the sterilizing agent. Hinged instruments should be left open.		Arrange packs loosely in the sterilization chamber. Open or disassemble hinged or other complex instruments to permit exposure to sterilizing agents.		
3. Before sterilization of critical and semi critical care instruments, inspect instruments for cleanliness, then wrap or place them in containers designed to maintain sterility during storage (e.g. cassettes and organizing trays). Supporting evidence: 1A		Same as CDC.		
Processing Critical Care Items				
Critical care items should be heat sterilized.	Critical care items should be sterilized by heat. Supporting evidence: IPC-04-02			

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
Processing Semi Critical Care Items				
Semi critical care items should be heat sterilized. If the semi critical care item is heat sensitive it should at a minimum be processed with high-level disinfection.	Processing semi critical care items using heat. Items that cannot be sterilized should receive high-level disinfection (which does not necessarily destroy high levels of bacterial spores) by liquid immersion and then rinsing with sterile water. Due to toxicity of disinfection liquids use closed containers and chemically resistant gloves and aprons, goggles and face shields. Supporting evidence: IPC-04-03 CDC. Epidemiologic notes and reports: symptoms of irritation associated with exposure to glutaraldehyde-colourado. MMWR 1987;36:190-1. CDC Guidelines for environmental infection control in health care facilities: recommendations of CDC and the HICPAC. MMWR 2003;52(RR-10).			
Processing Non-Critical Care Items				
	Non-critical care items should be cleaned, or, if contaminated, cleaned and then disinfected with a hospital-grade tuberculocidal intermediate-level disinfectant. If cleaning and disinfection damages the surfaces, use disposable barriers. Supporting evidence: IPC-04-05. CDC Guidelines for Environmental Infection Control in health care Facilities: Recommendations of CDC and the HICPAC. MMWR 2003;52(RR-10). CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).			
E. Sterilization of Unwrapped Instruments				
1. Clean and dry instruments before the unwrapped sterilization cycle. Supporting evidence: 1B		Same as CDC.		
2. Use mechanical and chemical indicators for each unwrapped sterilization cycle (i.e., place an internal chemical indicator among the instruments or items to be sterilized). Supporting evidence: 1B		Same as CDC.		
3. Allow unwrapped instruments to dry and cool in the sterilizer before they are handled to avoid contamination and thermal injury. Supporting evidence: II		Same as CDC.		
4. Semi critical instruments that will be used immediately or within a short time can be sterilized unwrapped on a tray or in a container system, provided that the instruments are handled aseptically during removal from the sterilizer and transport to the point of use. Supporting evidence: II		Same as CDC.		
5. Critical instruments intended for immediate reuse can be sterilized unwrapped if the instruments are maintained sterile during removal from the sterilizer and transport to the point of use (e.g. transported in a sterile covered container). Supporting evidence: 1B		Same as CDC.		
6. Do not sterilize implantable devices unwrapped. Supporting evidence: 1B		Same as CDC.		
7. Do not store critical instruments unwrapped. Supporting evidence: 1B				

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
Allow instruments to dry and cool before handling.		Flash Sterilization Cycles: Do not use flash sterilization for convenience, as an alternative to purchasing additional instrument sets, or to save time. Clean and dry instruments before the flash sterilization cycle. Do not package or wrap instruments used during flash sterilization unless the sterilizer is specifically designed and labelled for this use. Use mechanical, chemical and biological indicators. Allow instruments to dry and cool before they are handled. Critical instruments intended for immediate reuse can undergo flash sterilization if the instruments are maintained sterile during removal from the sterilizer and transport to the point of use in a sterile covered container. Semi critical instruments that will be used immediately or within a short time can undergo flash sterilization on a tray or in a container system, provided that the instruments are handled aseptically during removal from the sterilizer and transported to the point of use. Do not flash-sterilize implantable devices.		
F. Sterilization Monitoring				
1. Use mechanical, chemical, and biological monitors according to the manufacturer's instructions to ensure the effectiveness of the sterilization process. Supporting evidence: 1B	Monitor sterilization procedures and equipment using mechanical, chemical and biological indicators. Reprocesses if any of these methods fails. Supporting evidence: IPC-04-04	Same as CDC.	Follow manufacturer's instructions. Any malfunction should be noted and action taken for reprocessing. Clinic should have a protocol to follow if monitoring shows equipment failure.	
	Monitor equipment's ability to achieve sterilization, through mechanical, chemical and biological indicators. Do not use "liquid chemical sterilants" to sterilize critical and semi critical care instruments. Bead sterilizers may be used when the instruments is being used mid-procedure on the same individual.	Label package with: sterilizer identification number; load number; operator's initials, and indefinite shelf-life label. The use of self-adhesive labels or tapes is preferred. Labelling markers should be indelible, non bleeding and non toxic.		
2. Monitor each load with mechanical (e.g. time, temperature, and pressure) and chemical indicators. Chemical indicators do not guarantee that sterilization has taken place, they allow determination of certain equipment malfunctions. Biological indicators are the accepted method for monitoring sterilization. Mechanical indicators do not ensure sterilization, but indicate a problem with the sterilization cycle. Supporting evidence: II	Mechanical monitoring includes observing cycle time, temperature, and pressure by observing the gauges. Correct readings don't ensure sterilization, however, incorrect readings may indicate a problem with equipment. Supporting evidence: IPC-04-04		Monitor with chemical, mechanical and biological indicators. Chemical indicators including time/ temp/ and/or humidity sensitive tape, strips or pellets should be used on every package. Indicators should also be used inside each large package wrapped in cloth. Chemical indicators do not guarantee that sterilization has taken place. Mechanical indicators, such as thermometers, time indicators and pressure monitors must be monitored for every load. They do not guarantee that sterilization has taken place. Biological indicators (spore tests) are the only accurate tests that monitor the actual effectiveness of the sterilization process and confirm that sterilization has taken place. All sterilizers must be monitored with a spore test at least monthly. Critical care items should be placed in a sterilizer that is tested weekly. If the spore test is positive, the equipment should be checked and if the repeated test is positive and the device should be serviced. Maintain records for a period of two years including sterilizer serial number, date of testing, test results, temperature conditions and the operator.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
3. Place a chemical indicator on the inside of each package. If the internal indicator is not visible from the outside, also place an exterior chemical indicator on the package.	Chemical indicators (tape or special markings) do not prove sterilization has been achieved, they detect certain equipment malfunctions and help identify procedural errors. Supporting evidence: IPC-04-04	Use an internal chemical indicator in each package. If the indicator cannot be seen from the outside of the package, also use an external indicator.		
4. Place items/packages correctly and loosely into the sterilizer so as not to impede penetration of the sterilant. Supporting evidence: 1B	Biological indicators (BI), i.e. spore tests, verify the sterilization process directly. Periodically use BI, at least weekly. Supporting evidence: IPC-04-04			
5. Do not use instrument packs if mechanical or chemical indicators indicate inadequate processing. Supporting evidence: 1B		Same as CDC.		
6. Monitor sterilizers at least weekly by using a biological indicator with a matching control (i.e., biological indicator and control from same lot number). Supporting evidence: 1B	A control BI, from the same lot as the test indicator and not processed through the sterilizer, should b incubated with the test BI; the control BI should yield positive results for bacterial growth. Supporting evidence: IPC-04-04	Same as CDC.		
7. Use a biological indicator for every sterilizer load that contains an implantable device. Verify results before using the implantable device, whenever possible. Supporting evidence: 1B				
		Perform air removal testing on prevacuum steam autoclaves according to manufacturer's instructions.		
8. The following are recommended in the case of a positive spore test:	In the event of a positive spore test: Supporting evidence: IPC-04-04	Recommendations for a positive spore test:		
	a) Repeat the BI test immediately after correctly loading the sterilizer and using the same cycle that produced the failure. Supporting evidence: IPC-04-04	Items other than implantable devices do not necessarily need to be recalled.		
a. Remove the sterilizer from service and review sterilization procedures (e.g. work practices and use of mechanical and chemical indicators) to determine whether operator error could be responsible. Supporting evidence: II	b) Remove the sterilizer from service, and all records reviewed of chemical and mechanical monitoring since the last negative BI test. Supporting evidence: IPC-04-04	Same as CDC.		
b. Retest the sterilizer by using biological, mechanical, and chemical indicators after correcting any identified procedural problems. Supporting evidence: II	c) Common reasons for a positive BI in the absence of mechanical failure include: overloading, failure to provide adequate package separation, incorrect or excessive packaging material. Supporting evidence: IPC-04-04	Same as CDC.		
c. If the repeat spore test is negative, and mechanical and chemical indicators are within normal limits, put the sterilizer back in service. Supporting evidence: II	d) Put sterilizer back into service if the BI test is negative and the chemical and mechanical monitoring indicates adequate processing.	Same as CDC.		
	e) Retain results of biological monitoring.			
9. The following are recommended if the repeat spore test is positive:		Recommendations if the repeat spore test is positive:		
a. Do not use the sterilizer until it has been inspected or repaired or the exact reason for the positive test has been determined. Supporting evidence: II		Same as CDC.		
b. Recall, to the extent possible, and reprocess all items processed since the last negative spore test. Supporting evidence: II		Same as CDC.		
c. Before placing the sterilizer back in service, rechallenge the sterilizer with biological indicator tests in three consecutive empty chamber sterilization cycles after the cause of the sterilizer failure has been determined and corrected. Supporting evidence: II		Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
10. Maintain sterilization records (i.e. mechanical, chemical, and biological) in compliance with state and local regulations. Supporting evidence: 1B		Maintain sterilization records for a period dictated by local statutes and MTF policy or two years, whichever is longer. Minimum documentation includes: date and time of test; b. sterilizer ID #; sterilizer conditions - temperature and exposure period, if available; individual conducting the test; results of the test and control and nature and date of any malfunctions or repairs.		
G. Storage Area for Sterilized Items and Clean Dental Supplies				
1. Implement practices on the basis of date- or event-related shelf-life for storage of wrapped, sterilized instruments and devices. Supporting evidence: 1B		Same as CDC.		
2. Even for event-related packaging, at a minimum, place the date of sterilization, and if multiple sterilizers are used in the facility, the sterilizer used, on the outside of the packaging material to facilitate the retrieval of processed items in the event of a sterilization failure. Supporting evidence: 1B		Label packages as discussed in the Preparation and Packaging section.		
3. Examine wrapped packages of sterilized instruments before opening them to ensure the barrier wrap has not been compromised during storage. Supporting evidence: II		Same as CDC.		
4. Reclean, repack, and resterilize any instrument package that has been compromised. Supporting evidence: II		Same as CDC.		
5. Store sterile items and dental supplies in covered or closed cabinets, if possible. Do not store under sinks or other locations where they might become wet. Supporting evidence: II		Store sterile items and dental supplies in clean, dry, and dust/lint-free areas with limited access. Covered or closed cabinets are recommended. If sterile items are stored in a patient-care area, they must be in covered or closed cabinets. Do not store sterile supplies or patient-care items under the sink (or any location where they may become wet), on the floor, windowsill, or any area other than designated shelving or cabinets. Do not store sterile items with items not intended for clinical use. As a general rule, keep like items together. To allow for adequate air circulation, cleaning and compliance with local fire codes, follow MTF guidelines. In the absence of such guidance store clean and sterile materials at least 8 to 10 inches above the floor, 18 inches below the ceiling, and 2 inches from the outside walls. Maintain stock rotation according to the "first in, first out" principle. Only handle packages when absolutely necessary. Do not use shipping cartons to dispense sterile or clean patient treatment items. Sterile supplies should be trans ported in a covered or enclosed cart.		
VII. ENVIRONMENTAL INFECTION CONTROL				
A. General Recommendations				
		Do not use bleach as a primary hospital-grade environmental surface disinfectant in the dental clinic. A manufacturer-recommended diluted bleach solution maybe e used to clean DUWLs		
1. Follow the manufacturer's instructions for correct use of cleaning and EPA-registered hospital disinfecting products. Supporting evidence: 1B, 1C		Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
2. Do not use liquid chemical sterilants/high-level disinfectants for disinfection of environmental surfaces (clinical contact or housekeeping). Supporting evidence: 1B, 1C		Same as CDC.		
3. Use PPE, as appropriate, when cleaning and disinfecting environmental surfaces. Such equipment might include gloves (e.g. puncture- and chemical-resistant utility), protective clothing (e.g. gown, jacket, or lab coat), and protective eyewear/face shield, and mask. Supporting evidence: 1C		Same as CDC.		
		Do not use low-or intermediate-level disinfectants on critical or semi critical dental instruments or materials. Avoid the use of spray bottles that generate mists or aerosols. Do not immerse gauze in disinfectants or wrap items in disinfectant to minimize the spray. To facilitate daily cleaning, keep treatment areas free of unnecessary equipment and supplies.		
B. Clinical Contact Surfaces				
1. Use surface barriers to protect clinical contact surfaces, particularly those that are difficult to clean (e.g. switches on dental chairs) and change surface barriers between patients. Supporting evidence: II	Environmental surfaces such as clinical contact surfaces and housekeeping surfaces typically need to be cleaned only. Whenever the environmental surface is suspected to be contaminated with blood, saliva, or other bodily fluids or water containing any bodily fluid, then it should be cleaned and disinfected. These surfaces can also be barrier protected. Clinical contact surfaces that may have been contaminated should be cleaned and disinfected between clients and at the end of the workday using a hospital-grade tuberculocidal intermediate-level disinfectant. Supporting evidence: IPC-05-01 CDC Guidelines for Environmental Infection Control in health care Facilities: recommendations for CDC and HICPAC. MMWR 2003;52(RR-10). CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		
		Clean and disinfect surfaces between patients only when the integrity of physical barriers has been compromised or when visibly soiled. Clean and disinfect environmental surfaces that have been covered with barriers at the end of each clinical day.		
2. Clean and disinfect clinical contact surfaces that are not barrier-protected, by using an EPA-registered hospital disinfectant with a low- (i.e., HIV and HBV label claims) to intermediate-level (i.e., tuberculocidal claim) activity after each patient. Use an intermediate-level disinfectant if visibly contaminated with blood. Supporting evidence: 1B	Barrier protection for clinical contact surfaces and equipment include: clear plastic wrap, plastic bags, plastic sheets, plastic tubing, plastic-backed paper, materials that are impervious to moisture. Remove and discard between clients, using gloves. If the surface below became contaminated, it should be cleaned and disinfected. Discard gloves following removal of the barrier. Supporting evidence: IPC-05-02 CDC Guidelines for Environmental Infection Control In health care Facilities: recommendations of CDC and HISPAC. MMWR 2003;52(RR-10).	Same as CDC, except that the disinfectant is required to be at least intermediate-level.	Most surfaces are classified as non critical with respect to transmission of disease; however, CDC does not consider low-level disinfectants to be adequate for cleaning these surfaces; instead, intermediate level agents are the minimum to be used. Clean and dry surfaces prior to disinfection. Differs from CDC - Parts of the dental unit and chair require daily sanitization with a low or intermediate level disinfection agent. however, other areas, such as switches, headrests and brackets trays, chair adjustment controls, light handles, air/water syringe handles, saliva ejector and vacuum couplings, unit switches and handles, mobile cart or operatory counter surfaces, and operatory sink hand-operated valves require intermediate to high-level agents.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
		General cleaning and disinfection are recommended for clinical contact surfaces, dental unit surfaces, and countertops at the end of daily work activities and are required if surfaces have become contaminated since their last cleaning.		
C. Housekeeping Surfaces				
1. Clean housekeeping surfaces (e.g. floors, walls, and sinks) with a detergent and water or an EPA-registered hospital disinfectant/detergent on a routine basis, depending on the nature of the surface and type and degree of contamination, and as appropriate, based on the location in the facility, and when visibly soiled. Supporting evidence: 1B	Housekeeping surfaces should be periodically cleaned with dilute detergents or household low-level disinfectants. If the surface is contaminated with blood, saliva or other bodily fluids, the surface should be cleaned promptly and then disinfected with a hospital-grade tuberculocidal intermediate-level disinfectant. Visible organic material should be removed with absorbent material and discarded in a leak-proof container. If tuberculocidal disinfectant is not available, use a 1:100 dilution of sodium hypochlorite e.g. approximately 60 ml. or 1/4 cup of 5.25% household chlorine bleach in 4 litres [1 gallon] of water. Supporting evidence: IPC-05-03 CDC Guidelines for Environmental Infection Control In health care Facilities: recommendations of CDC and HISPAC. MMWR 2003;52(RR-10).	Same as CDC. Clean walls, blinds, and window curtains in patient-care areas when they are visibly dusty or soiled.	Floors should be washed daily with a low or intermediate level disinfectant and walls should be washed monthly. No carpets on the operatory floors.	
2. Clean mops and cloths after use and allow to dry before reuse; or use single-use, disposable mop heads or cloths. Supporting evidence: II	Cleaning tools, such as mop heads of cloths should be cleaned after use and allowed to dry before reuse. Single use items avoid spreading contamination. Fresh cleaning solution should be made each day. Allow the container to dry between uses.			
3. Prepare fresh cleaning or EPA-registered disinfecting solutions daily and as instructed by the manufacturer. Supporting evidence: II				
4. Clean walls, blinds, and window curtains in patient-care areas when they are visibly dusty or soiled. Supporting evidence: II				
D. Spills of Blood and Body Substances				
1. Clean spills of blood or OPIM and decontaminate surface with an EPA-registered hospital disinfectant with low- (i.e., HBV and HIV label claims) to intermediate-level (i.e., tuberculocidal claim) activity, depending on size of spill and surface porosity. Supporting evidence: 1B, 1C		Same as CDC. Use of commercially available spill kits is recommended.		
E. Carpet and Cloth Furnishings				
1. Avoid using carpeting and cloth-upholstered furnishings in dental operatories, laboratories, and instrument processing areas. Supporting evidence: II	Do not use carpeting and cloth furnishings in client care areas, as they cannot be reliably disinfected. Supporting evidence: CDC Guidelines for Environmental Infection Control In health care Facilities: recommendations of CDC and HISPAC. MMWR 2003;52(RR-10).	Same as CDC.		
F. Regulated Medical Waste				
1. General Recommendations				
a. Develop a medical waste management program. Disposal of regulated medical waste must follow federal, state, and local regulations. Supporting evidence: 1C	Develop a plan for management of medical waste (that includes storage, handling, neutralization and disposal) that complies with local provincial and municipal regulations. Supporting evidence: IPC-05-04	Follow federal, state and local regulations for disposal of regulated medical waste. Definitions of regulated medical waste vary by locality.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
b. Ensure that DHCP who handle and dispose of regulated medical waste are trained in appropriate handling and disposal methods and informed of the possible health and safety hazards. Supporting evidence: 1C		Same as CDC.		
2. Management of Regulated Medical Waste in Dental Health Care Facilities				
a. Use a colour-coded or labelled container that prevents leakage (e.g. biohazard bag) to contain nonsharp regulated medical waste. Supporting evidence: 1C	Place non-sharp medical waste in a leak-resistant sturdy bag, which is securely closed. Supporting evidence: IPC-05-04	Same as CDC.	Discard contaminated disposable items (cotton rolls, rubber dams, paper products by containerization immediately after each client. Place them in a small plastic bag and tie it off and then discard in the operatory waste container, which should be discarded on a daily basis. Employ heavy-duty garbage bags or double bagging to prevent inadvertent littering. Some jurisdictions require auto claving of this waste before it can be legally discarded in municipal sanitation dumpsites.	
b. Place sharp items (e.g. needles, scalpel blades, orthodontic bands, broken metal instruments, and burs) in an appropriate sharps container (e.g. puncture resistant, colour-coded, and leak proof). Close container immediately before removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping. Supporting evidence: 1C	Keep puncture resistant sharps containers near point of use.	Same as CDC.	Discard needles, suture needles, burs and scalpel blades in a puncture-resistant, colour-coded and leak proof sharps containers. Close after each use and do not fill past the fill line.	
c. Pour blood, suctioned fluids or other liquid waste carefully into a drain connected to a sanitary sewer system, if local sewage discharge requirements are met and the state has declared this an acceptable method of disposal. Wear appropriate PPE while performing this task. Supporting evidence: 1C	The OHP wearing appropriate PPE can pour containers with blood or saliva can be poured into a utility sink, drain or toilet. Supporting evidence: IPC-05-04	Same as CDC.	Pour blood and other body fluids carefully down a drain connected to a sanitary sewer (e.g. toilet, most sinks). Some jurisdictions require pretreatment of biomedical liquid waste (including effluent from saliva ejector) with an intermediate to high-level disinfectant before they are discharged into the municipal sewer system.	
VIII. DENTAL UNIT WATERLINES (DUWL), BIOFILM, AND WATER QUALITY				
A. General Recommendations				
1. Use water that meets EPA regulatory standards for drinking water (i.e., <500 CFU/mL of heterotrophic water bacteria) for routine dental treatment output water. Supporting evidence: 1B, 1C	Follow regular waterline maintenance procedures outlined below to reduce the DUWL microorganisms to less than 500 CFU/mL. Supporting evidence: IPC-05-05	Same as CDC.	The minimum quality of water that should be delivered by the DUWL should have less than 500 colony forming units of bacteria per milliliter (<500 CFU/ml).	
2. Consult with the dental unit manufacturer for appropriate methods and equipment to maintain the recommended quality of dental water. Supporting evidence: II	Do not use waterline heaters. Do not touch the tubing with fingers or gloved hand when changing the water coolant bottle of a closed water system. Use a bulb syringe or sterile, single-use disposable products for irrigating open vascular sites and invasive surgical procedures. Follow manufacturer's instructions of the DUWL for daily and weekly maintenance in a closed or special water system. Supporting evidence: IPC-05-05		Use a DUWL maintenance protocol that is consistent with the manufacturer's recommendations.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
3. Follow recommendations for monitoring water quality provided by the manufacturer of the unit or waterline treatment product. Supporting evidence: II	Supporting evidence: IPC-05-06 CDC. Assessing the public health threat associated with waterborne cryptosporidiosis: report of a workshop. MMWR 1995;44(RR-6). CDC. Working Group on Waterborne Cryptosporidiosis. Cryptosporidium and water: a Public Health Handbook. Atlanta, GA: US Department of Health and Human Services, Public Health Service. CDC. 1997.	In the absence of manufacturer's recommendations for monitoring dental unit water quality, test water from each unit monthly for 3 months. If the unit meets standards during this period, then monitor water from the dental unit quarterly at a minimum. It is recommended to use a rotating schedule testing several units each month. If standards are not met (ie≥500 CFU/ml), review work practices, waterline treatment protocols, and waterline treatment and monitoring records. Correct any procedural problems, retreat the waterlines, and retest. If the test remains positive, a "shock- treatment of the waterlines may be indicated. Acceptable monitoring methods include: submitting water samples to the microbiology lab or using an in-office self-contained system. Maintain records for a minimum of 2 years.		Same as CDC.
4. Discharge water and air for a minimum of 20-30 seconds after each patient, from any device connected to the dental water system that enters the patient's mouth (e.g. handpieces, ultrasonic scalers, and air/water syringes). Supporting evidence: II	All waterlines should be purged at the beginning of each workday by flushing with water for 2-3 minutes. Handpieces utilizing water coolant should be run for 20-30 seconds after patient care.	Same as CDC.	CDC recommends that water and air be discarded for a minimum of 20-30 seconds after each client, from any device connected to the dental water system that enters the client's mouth (handpieces, ultrasonic scalers, and air/water syringes). Use of a CUWl conditioner is recommended.	Follow current OSAP, ADA, and CDC recommendations to flush lines for several minutes each morning. Flush handpieces with air/water for 20-30 seconds between patient appointments. Installing sterilized handpieces and sterile or disposable syringe tips after flushing will reduce cross-contamination.
5. Consult with the dental unit manufacturer on the need for periodic maintenance of antiretraction mechanisms. Supporting evidence: 1B		Same as CDC.	Periodic testing to confirm the efficacy of the clinic DUWL maintenance protocols is highly recommended.	If recommended by the dental unit manufacturer, install and maintain anti retraction valves to prevent oral fluids from being drawn into dental waterlines.
Sterile solutions should be used as a coolant/irrigation in the performance of oral surgical procedures.			CDC recommends sterile solutions be used as a coolant/irrigation in the performance or oral surgical procedures.	Use sterile solutions for all surgical irrigations. Additionally, ensure that only heat-sterilized/ sterile-disposable bulb syringes or sterile water delivery devices are employed to deliver the sterile water.
Dental unit water that remains untreated or unfiltered is unlikely to meet drinking water standards. Commercial devices and procedures designed to improve the quality of water used in dental treatment are available; methods demonstrated to be effective include self contained water systems combined with chemical treatment, in line microfilters, and combinations of these treatments. Removal or inactivation of dental waterline biofilms requires use of chemical germicides.		Clean high-volume evacuator and low-volume suction lines and traps daily using an evacuation system cleaner.		Avoid heating dental unit water as it may amplify biofilm formation and select organisms preadapted to growth in a human host.

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
		Use of independent reservoirs without use of a germicidal treatment will have no effect on waterline biofilms. Follow the unit manufacturer's recommended maintenance regimens to control biofilm formation. Handle the water reservoir with care to avoid cross contamination.		Consider using a separate water reservoir system to eliminate the inflow of municipal water into the dental unit. In addition to having better control over the quality of the source water, it would eliminate interruptions in care when "boil-water" notices are issued by local health authorities. Contact the manufacturer of the dental unit for a compatible system and treatment protocols before undertaking this step.
				Educate and train OHP on effective treatment measures to ensure compliance and minimize risks to equipment and personnel.
				Monitor scientific and technological developments in this area to identify improved technical approaches as they become available.
				Cooperate with the oral healthcare industry to develop and validate standard protocols for maintaining and monitoring dental unit waterlines.
				It is important to ensure that the sterile water system or device marketed to improve dental water quality has been cleared for market by the U.S. Food and Drug Administration.
B. Boil-Water Advisories				
1. The following apply while a boil-water advisory is in effect:	During a boil water advisory, the following precautions should be taken: Supporting evidence: IPC-05-06 CDC. Assessing the public health threat associated with waterborne cryptosporidiosis: report of a workshop. MMWR 1995;44(RR-6). CDC. Working Group on Waterborne Cryptosporidiosis. Cryptosporidium and water: a public health handbook. Atlanta, GA: US Department of Health and Human Services, Public Health Service. CDC. 1997.	The following apply during a boil-water advisory:		
a. Do not deliver water from the public water system to the patient through the dental operative unit, ultrasonic scaler, or other dental equipment that uses the public water system. Supporting evidence: 1B, 1C	a. Do not deliver public water through the dental unit, ultrasonic scaler or other devices or equipment. Use alternative closed delivery systems. Supporting evidence: IPC-05-06 CDC. Assessing the public health threat associated with waterborne cryptosporidiosis: report of a workshop. MMWR 1995;44(RR-6). CDC. Working Group on Waterborne Cryptosporidiosis. Cryptosporidium and water: a public health handbook. Atlanta, GA: US Department of Health and Human Services, Public Health Service. CDC. 1997.	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
b. Do not use water from the public water system for dental treatment, patient rinsing, or handwashing. Supporting evidence: 1B, 1C	b. Clients should not use tap water for mouth rinsing. Bottled or distilled water should be used. Supporting evidence: IPC-05-06 CDC. Assessing the public health threat associated with waterborne cryptosporidiosis: report of a workshop. MMWR 1995;44(RR-6). CDC. Working Group on Waterborne Cryptosporidiosis. Cryptosporidium and water: a public health handbook. Atlanta, GA: US Department of Health and Human Services, Public Health Service. CDC. 1997.	Same as CDC.		
c. For handwashing, use antimicrobial-containing products that do not require water for use (e.g. alcohol-based hand rubs). If hands are visibly contaminated, use bottled water, if available, and soap for handwashing or an antiseptic towelette. Supporting evidence: 1B, 1C	c. Do not use tap water for hand hygiene, use antimicrobial products that don't require water. If hands are known to be contaminated, they should be washed with bottled or distilled water and an antimicrobial soap. Supporting evidence: IPC-05-06 CDC. Assessing the public health threat associated with waterborne cryptosporidiosis: report of a workshop. MMWR 1995;44(RR-6). CDC. Working Group on Waterborne Cryptosporidiosis. Cryptosporidium and water: a public health handbook. Atlanta, GA: US Department of Health and Human Services, Public Health Service. CDC. 1997.	Same as CDC.		
2. The following apply when the boil-water advisory is cancelled:	When the boil water advisory is cancelled: Supporting evidence: IPC-05-06	The following apply when the boil-water advisory is cancelled:		
a. Follow guidance given by the local water utility regarding adequate flushing of waterlines. If no guidance is provided, flush dental waterlines and faucets for 1-5 minutes before using for patient care. Supporting evidence: 1C	a. Incoming public water system lines, including taps or other waterlines should be flushed for 1-5 minutes. Supporting evidence: IPC-05-06	Same as CDC.		
b. Disinfect dental waterlines as recommended by the dental unit manufacturer. Supporting evidence: II	b. Disinfect DUWL and equipment according to the manufacturer's instructions. Supporting evidence: IPC-05-06	Same as CDC.		
IX. SPECIAL CONSIDERATIONS				
A. Dental Handpieces and Other Devices Attached to Air and Waterlines				
1. Clean and heat-sterilize handpieces and other intra oral instruments that can be removed from the air and waterlines of dental units between patients. Supporting evidence: 1B, 1C	Any dental device connected to the dental air/water system that enters the client's mouth should be run to discharge water and air for a minimum of 20-30 seconds after each client. Dental handpieces and other intra oral devices attached to air or waterlines should be sterilized after client care use. Ethylene oxide gas cannot adequately sterilize internal components of handpieces. Supporting evidence: IPC-06-01	Same as CDC.		
2. Follow the manufacturer's instructions for cleaning, lubrication, and sterilization of handpieces and other intra oral instruments that can be removed from the air and waterlines of dental units. Supporting evidence: 1B	Follow the manufacturer's instructions closely for cleaning, lubrication and sterilization. Supporting evidence: IPC-06-01	Same as CDC.		
3. Do not surface-disinfect, use liquid chemical sterilants, or ethylene oxide on handpieces and other intra oral instruments that can be removed from the air and waterlines of dental units. Supporting evidence: 1C	Components of dental devices and equipment permanently attached to DUWL should be treated as clinical contact surfaces. Components such as electric handpiece motors, handles for ultrasonic devices or dental unit attachments of saliva ejectors) should be covered with barriers that are changed after each use. If suspicion of contamination exists, clean and disinfect it with a hospital grade intermediate-level disinfectant. Supporting evidence: IPC-06-01	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
4. Advise patients not to close their lips tightly around the tip of the saliva ejector to evacuate oral fluids. Supporting evidence: II	Do not allow clients to seal their mouths over the saliva ejector tip. Engineering controls exist which prevent negative pressure to form around the tip of the saliva ejector. This prevents backflow from the line into the client's mouth. Rinse suction lines with water or appropriate cleaning or disinfecting solution between clients. Lines should be cleaned at least once a week with an enzymatic cleaner. Supporting evidence: IPC-06-02	Consider advising patients not to close their lips tightly around the tip of the saliva ejector when evacuating oral fluids due to the potential for backflow.		
B. Dental Radiology				
		Follow hand hygiene outlined in this paper.		
1. Wear gloves when exposing radiographs and handling contaminated film packets. Use other PPE (e.g. protective eyewear, mask, and gown) as appropriate if spattering of blood or other body fluids is likely. Supporting evidence: 1A, 1C	Wear gloves and other PPE when taking radiographs and handling contaminated film packets. Supporting evidence: IP-06-03	Same as CDC.	Wear gloves when taking radiographs and handling contaminated film packets. Radiography equipment should be protected with surface barriers that are changed after each client. If barriers are not used, thoroughly wipe the head and the exposure buttons with an intermediate to high-level disinfectant following each client visit.	
2. Use heat-tolerant or disposable intra oral devices whenever possible (e.g. film-holding and positioning devices). Clean and heat-sterilize heat-tolerant devices between patients. At a minimum, high-level disinfect semi critical heat-sensitive devices, according to manufacturer's instructions. Supporting evidence: 1B	Heat sensitive radiograph accessories exist and should be heat sterilized between clients. The film packet should be disinfected using a hospital-grade tuberculocidal intermediate-level disinfectant. Then rinse and dry and open to develop the film. Alternately, open contaminated packet using gloved hands, drop film onto a clean surface without touching and dispose of the empty packets. Remove gloves and process film. Alternatively film barrier pouches may be used. Carefully remove from the pouch to avoid contamination of the inner film packet. Supporting evidence: IP-06-03	Same as CDC.	Whenever possible, treat film holding devices as semi critical and heat sterilize them between clients. If this is not possible, employ high-level disinfection. Disposable bite block covers should be used for each client. If these disposable covers are not available, then sterilize them. Intra-oral film packets are semi critical care items.	
3. Transport and handle exposed radiographs in an aseptic manner to prevent contamination of developing equipment. Supporting evidence: II	Avoid contamination of developing equipment. Use protective barriers or clean and disinfect contaminated surfaces using a hospital-grade tuberculocidal intermediate-level disinfectant. Supporting evidence: IP-06-03	Same as CDC.	It is no longer acceptable to contaminate processor rooms or daylight loaders by introducing film packs or gloves still coated in saliva.	
4. The following apply for digital radiography sensors:			Digital radiography:	
	After radiograph exposure and before glove removal rinse and dry film. Supporting evidence: IPC-06-03			
	Change surface barriers on radiograph equipment, or clean and disinfect between clients. Supporting evidence: IPC-06-03			
a. Use FDA-cleared barriers. Supporting evidence: 1B	Radiographic sensors and other associated instruments are semi critical devices and therefore should be cleaned and heat sterilized or disinfected between clients. Alternatively use barrier protection; however, if they are contaminated they should be cleaned and disinfected prior to next client use. Follow manufacturer's instruction carefully for barrier and disinfection/sterilization procedures for these devices. Supporting evidence: IPC-06-03		Use barriers on all intra oral sensors.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
b. Clean and heat-sterilize, or high-level disinfect, between patients, barrier-protected semi critical items. If the item cannot tolerate these procedures then, at a minimum, protect with an FDA-cleared barrier and clean and disinfect with an EPA-registered hospital disinfectant with intermediate-level (i.e.tuberculocidal claim) activity, between patients. Consult with the manufacturer for methods of disinfection and sterilization of digital radiology sensors and for protection of associated computer hardware. Supporting evidence: 1B		Differs slightly from CDC. Dental radiography sensors and other high-technology instruments (e.g. intra oral camera, electronic periodontal probe, occlusal analyzers, and lasers) come into contact with mucous membranes and are considered semi critical devices. They should be cleaned and ideally heat-sterilized or high-level disinfected between patients. However, these items vary by manufacturer or type of device in their ability to be sterilized or high-level disinfected. The following apply for digital radiography sensors: a) Use FDA-cleared barriers. b) To minimize the potential for device-associated infections, after removing the barrier, clean and disinfect using an EPA-registered hospital disinfectant with an intermediate-level activity after each patient. c) Follow manufacturer's recommendations for cleaning and disinfecting computer equipment. Use surface barriers if the equipment is likely to be contacted or contaminated during patient-care activities.	After removing the barrier, clean and disinfect with an intermediate-level disinfectant after each client.	
		Differs slightly from CDC. Use surface barriers to protect clinical contact surfaces (e.g. x-ray tube head, switches, control panels) and change surface barriers between patients. Clean and disinfect surfaces between patients only when the integrity of the barrier has been compromised or when visibly soiled. Clean and disinfect environmental surfaces that have been covered with barriers at the end of each clinical day.	Follow manufacturer recommendations for cleaning and disinfecting computer equipment. Use surface barriers if the equipment is likely to be contacted or contaminated during client-care activities.	
C. Aseptic Technique for Parenteral Medications				
1. Do not administer medication from a syringe to multiple patients, even if the needle on the syringe is changed. (IA)		Handle containers of medication with aseptic techniques. Single dose vials should be used for parenteral medications whenever possible. If a multi-dose vial must be used, then clean the access diaphragm with 70% alcohol prior to inserting a sterile device. Medication vials, syringes, or supplies should not be carried in uniform or clothing pockets.		
2. Use single-dose vials for parenteral medications when possible. The access diaphragm in multi-dose vials should be cleansed with 70% alcohol before inserting a sterile device. Supporting evidence: II				
3. Do not combine the leftover contents of single-use vials for later use. Supporting evidence: 1A		Same as CDC.		
4. The following apply if multidose vials are used:				
a. Cleanse the access diaphragm with 70% alcohol before inserting a device into the vial. Supporting evidence: 1A		Same as CDC.		
b. Use a sterile device to access a multiple-dose vial and avoid touching the access diaphragm. Both the needle and syringe used to access the multidose vial should be sterile. Do not reuse a syringe even if the needle is changed. Supporting evidence: 1A		Same as CDC.		
c. Keep multidose vials away from the immediate patient treatment area to prevent inadvertent contamination by spray or spatter. Supporting evidence: II		Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
d. Discard the multidose vial if sterility is compromised. Supporting evidence: 1A		Same as CDC.		
		Follow manufacturer's guidelines for storage, use and disposal of pharmaceuticals or MTF policies if more stringent.		
5. Use fluid infusion and administration sets (i.e., IV bags, tubings and connections) for one patient only and dispose of appropriately. Supporting evidence: 1B		Same as CDC.		
D. Single-Use (Disposable) Devices				
1. Use single-use devices for one patient only and dispose of them appropriately. Supporting evidence: 1C	Use single-use devices on one client and then discard. Supporting evidence: IP-06-04			
E. Preprocedural Mouth Rinses				
1. No recommendation is offered regarding use of preprocedural antimicrobial mouth rinses to prevent clinical infections among DHCP or patients. Although studies have demonstrated that a preprocedural antimicrobial rinse (e.g. chlorhexidine gluconate, essential oils, or povidone-iodine) can reduce the level of oral microorganisms in aerosols and spatter generated during routine dental procedures and can decrease the number of microorganisms introduced in the patient's bloodstream during invasive dental procedures , the scientific evidence is inconclusive that using these rinses prevents clinical infections among DHCP or patients (see discussion, Preprocedural Mouth Rinses). Supporting evidence: Unresolved issue	Anti microbial mouth rinses should be used by a client prior to a dental procedure in order to a) reduce the number of microorganisms that might be released from the client's mouth in the form of aerosols or spatter b) decrease the number of microorganisms introduced in the clients bloodstream or transient bacteremias. In clients that cannot spit or rinse consideration may be given to brushing or swabbing the antimicrobial solution in the mouth prior to care. Supporting evidence: IPC-06-05	The use of preprocedural antimicrobial mouth rinses (e.g. chlorhexidine gluconate, essential oils, or povidone-iodine) is optional, but should be considered to reduce the level of oral microorganisms in aerosols and spatter generated during routine dental procedures and to decrease the number of microorganisms introduced in the patient's bloodstream during invasive dental procedures. The scientific evidence is inconclusive that using these rinses prevents clinical infections among OHP or patients.	Reduce the aerosol production by the following: Consider asking clients to brush their teeth and/or rinse their mouth with a mouthwash prior to dental treatment. Three 10 second rinses can temporarily reduce a client's oral microbial count by up to 97%. Use a rubber dam whenever possible to reduce the microbial level with the aerosol produced. Use high-volume evacuation systems, clean tooth preparations with water alone, instead of a combination of air and water spray, polish restorations with rubber points and finishing burs instead of bristle brushes, cover ultrasonic cleaners with lids to reduce the spread of aerosols.	
F. Oral Surgical Procedures				
1. The following apply when performing oral surgical procedures:				
a. Perform surgical hand antisepsis by using an antimicrobial product (e.g. antimicrobial soap and water, or soap and water followed by alcohol-based hand scrub with persistent activity) before donning sterile surgeon's gloves. (1B) b. Use sterile surgeon's gloves. Supporting evidence: 1B		Same as CDC.		
c. Use sterile saline or sterile water as a coolant/irrigant when performing oral surgical procedures. Use devices specifically designed for delivering sterile irrigating fluids (e.g. bulb syringe, single-use disposable products, and sterilizable tubing). Supporting evidence: 1B		Same as CDC.		
		Place the date opened on all sterile irrigating solutions. Discard at the end of the day or sooner if contaminated or contamination is suspected.		
G. Handling of Biopsy Specimens				
1. During transport, place biopsy specimens in a sturdy, leak proof container labelled with the biohazard symbol. Supporting evidence: 1C	Place biopsy specimens in a sturdy, leak-proof container with a secure lid for transportation. Supporting evidence: IPC-06-06 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
2. If a biopsy specimen container is visibly contaminated, clean and disinfect the outside of a container or place it in an impervious bag labelled with the biohazard symbol. Supporting evidence: 1C	Take care to avoid contaminating the outside of the container. If this occurs, clean and disinfect or place in an impervious bag. Provincial/municipal regulations may require container labeling with the biohazard symbol during storage, transport, shipment and disposal. Supporting evidence: IPC-06-06 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		
H. Handling of Extracted Teeth				
1. Dispose of extracted teeth as regulated medical waste unless returned to the patient. Supporting evidence: 1C	Dispose of extracted teeth in general waste. Supporting evidence: IPC-06-07 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		
2. Do not dispose of extracted teeth containing amalgam in regulated medical waste intended for incineration. Supporting evidence: II	Do not dispose of teeth containing dental amalgam in waste that may be incinerated. Supporting evidence: IPC-06-07 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Same as CDC.		
3. Clean and place extracted teeth in a leak proof container, labelled with a biohazard symbol, and maintain hydration for transport to educational institutions or a dental laboratory. Supporting evidence: 1C	Extracted teeth to be sent to a dental laboratory should be cleaned and surface-disinfected with a hospital-grade tuberculocidal intermediate-level disinfectant. Supporting evidence: IPC-06-07 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).			
4. Heat-sterilize teeth that do not contain amalgam before they are used for educational purposes. Supporting evidence: 1B	Teeth collected for preclinical educational training should be cleaned and maintained in a hydrated state in a closed container. Local regulations may require labeling with the biohazard symbol. Prior to educational use, teeth without amalgam should be autoclaved. Teeth with amalgam restorations should be immersed in a 10% formalin solution for at least 2 weeks. Supporting evidence: IPC-06-07 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).	Using extracted teeth in educational settings: a) clean and place extracted teeth in a leak proof container labelled with a biohazard symbol. b) place amalgam-free teeth in a heat-resistant glass container. c) Fill the container no more than half-way with deionized or distilled water or saline, and loosely cover. d) Process through a steam sterilizer at 121 degrees C for 40 minutes using a fluid or liquid cycle. At the end of the cycle, remove the container slowly without shaking to avoid the boiling over of the fluid. e) If using extracted teeth containing amalgam, immerse in 10% formalin for two weeks before use in an educational setting.		
	Return extracted teeth to client without any special considerations for infection prevention and control. Supporting evidence: IPC-06-07 CDC Guidelines for Infection Control in Dental Health-Care Settings - 2003. MMWR 2003;52(RR-17).			
I. Dental Laboratory				
	Communication between the dental practice and the laboratory is important to ensure appropriate cleaning and disinfection and to avoid damaging materials due to disinfectant overexposure. If no indication has been made on the transported materials, then clean and disinfect the material.	Follow hand-hygiene recommendations in this paper.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
1. Use PPE when handling items received in the laboratory until they have been decontaminated. (1A, 1C) 2. Before they are handled in the laboratory, clean, disinfect, and rinse all dental prostheses and prosthodontic materials (e.g. impressions, bite registrations, occlusal rims, and extracted teeth) by using an EPA-registered hospital disinfectant having at least an intermediate-level (i.e. tuberculocidal claim) activity. Supporting evidence: 1B	Use PPE until cleaning and disinfection is completed. Dental prostheses, impressions, orthodontic appliances and other prosthodontic materials should be cleaned, disinfected with a hospital-grade tuberculocidal intermediate-level disinfectant and thoroughly rinsed before being handled. Clean as soon as possible after removal from the client's mouth. Wet impressions should be placed in an impervious bag. Supporting evidence: IPC-06-08	Same as CDC. Use appropriate protection (e.g. mask, protective eyewear) from projectile and particulate hazards when lathes and other rotary instruments are used.	Sanitize or disinfect all impressions and prostheses/devices prior to transfer to the lab. Send items to lab in a sealed plastic bag or container that is clearly labelled to indicate the contents were disinfected and the procedures used.	
3. Consult with manufacturers regarding the stability of specific materials (e.g. impression materials) relative to disinfection procedures. Supporting evidence: II	Consult with manufacturers instructions regarding the stability of specific materials during disinfection. Supporting evidence: IPC-06-08	Same as CDC.		
4. Include specific information regarding disinfection techniques used (e.g. solution used and duration), when laboratory cases are sent off-site and on their return. Supporting evidence: II	Transporting of non-decontaminated clinical materials may be subject to provincial and municipal regulations. Supporting evidence: IPC-06-08	Same as CDC.		
5. Clean and heat-sterilize heat-tolerant items used in the mouth (e.g. metal impression trays and face-bow forks). Supporting evidence: 1B	Heat-tolerant items used in the mouth (e.g. metal impression trays) should be cleaned and heat sterilized between clients.	Same as CDC.		
6. Follow manufacturer's instructions for cleaning and sterilizing or disinfecting items that become contaminated but do not normally contact the patient (e.g. burs, polishing points, rag wheels, articulators, case pans, and lathes). If manufacturer's instructions are unavailable, clean and heat-sterilize heat-tolerant items or clean and disinfect with an EPA-registered hospital disinfectant with low- (HIV, HBV effectiveness claim) to intermediate-level (tuberculocidal claim activity, depending on the degree of contamination. Supporting evidence: II	Items that do not normally contact the client, but become contaminated and cannot withstand heat sterilization should be cleaned and disinfected between clients using manufacturer's instructions. If laboratory items (burs, polishing points, etc.) are used on contaminated appliances, prostheses or other material, they should be heat sterilized and disinfected between clients or discarded. Supporting evidence: IPC-06-08	At a minimum, clean and disinfect rag wheels daily. At a minimum clean and surface disinfect lathes daily. Clean and disinfect case pans and articulators when visibly soiled and after each case is completed. Clean and disinfect countertops and lab benches when visibly soiled and at the end of daily work activities.		
Before they are handled in the laboratory, clean, disinfect, and rinse all dental prostheses and prosthodontic materials (e.g. impressions, bite registrations, occlusal rims, and extracted teeth) by using an EPA-registered hospital disinfectant having at least an intermediate-level (i.e., tuberculocidal claim) activity.	Establish a separate receiving and disinfecting area to reduce contamination. Clean and disinfect environmental surfaces in the same manner as in the dental treatment area (see IPC-05-01). Supporting evidence: IPC-06-08	When using ultrasonic cleaners, place the item in a sealed, disposable plastic bag (filled with cleaning solution) into the ultrasonic machine and process. Following removal from the ultrasonic cleaner, dispose of the cleaning solution and disinfect the item before returning it to the patient.	Impressions: Rinse and follow manufacturer's recommendations for disinfectant. With impression materials that incorporate a disinfectant within the material itself, the tray still requires disinfection. Prostheses/devices: manually scrub the appliances with a brush, detergent or bactericidal soap and water, then use a disinfection solution. If copious amounts of calculus is present, immerse the appliance in a beaker or plastic bag filled with some and plaster removal solution or ultrasonic cleaner liquid and process it in an ultrasonic cleaner. Casts: should be made from disinfected impressions, and all items (e.g. wax rims) should be disinfected prior to contacting the casts. Articulators, case pans, water baths: disinfect these items with an intermediate to a high-level surface disinfectant prior to shipment to the lab or storing.	
	Waste in the dental laboratory (e.g. disposable trays or impression materials) may be discarded with general waste. Dispose of sharp items (burs, and blades) in puncture-resistant containers. Supporting evidence: IPC-06-08	Prior to reuse, clean and disinfect items used on appliances previously worn by the patient, even if the appliance was cleaned and disinfected before the adjustment/repair.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
	Appliances and prostheses for patients should be free of contamination. If dental lab staff disinfect, a hospital-grade tuberculocidal intermediate-level disinfectant should be used and the item placed in a tamper-evident container. Supporting evidence IPC-06-08	Mix pumice with clean water and dilute 1: 10 bleach or other appropriate disinfectant, and change daily at a minimum.		
J. Laser/Electrosurgery Plumes/Surgical Smoke				
1. No recommendation is offered regarding practices to reduce DHCP exposure to laser plumes/surgical smoke when using lasers in dental practice. Practices to reduce HCP exposure to laser plumes/surgical smoke have been suggested, including use of a) standard precautions (e.g. high-filtration surgical masks and possibly full face shields); b) central room suction units with in-line filters to collect particulate matter from minimal plumes; and c) dedicated mechanical smoke exhaust systems with a high-efficiency filter to remove substantial amounts of laser-plume particles. The effect of the exposure (e.g. disease transmission or adverse respiratory effects) on DHCP from dental applications of lasers has not been adequately evaluated (see previous discussion, Laser/Electrosurgery Plumes or Surgical Smoke). Supporting evidence: Unresolved issue.	To avoid inhaling or coming in contact with laser and electrosurgical plumes and surgical smoke use: standard precautions (e.g. high-filtration surgical masks and possibly full face shields) central room suction units with in-line filters dedicated mechanical smoke exhaust systems with high-efficiency filters, local smoke evacuation systems. Supporting evidence: IPC-06-09. CDC. NIOSH Control of smoke from laser/electric surgical procedures. Cincinnati. OH: US Department of Health and Human Services, Public Health Service, CDC,NIOSH 1996. DHHS publication no. (NIOSH) 96-128.	At a minimum: a) follow manufacturer's instructions regarding use and safety precautions b) use standard precautions when working in the laser environment. c) Wear appropriate PPE including N-95 or N-100 respirators to minimize exposure to laser plumes. d) Wear protective laser eyewear. e) Implement local exhaust ventilation controls that may include but are not limited to wall suction units with in-line filters and smoke evacuation units.		
K. Mycobacterium Tuberculosis				
1. General Recommendations				
a. Educate all DHCP regarding the recognition of signs, symptoms, and transmission of TB. Supporting evidence: 1B	OHP treating clients infected with M. tuberculosis (TB) should understand the pathogenesis of the development of TB to help determine how to manage such clients, and to recognize signs and symptoms to help with prompt detection of TB in clients. Develop a TB control program appropriate for their level of risk. Supporting evidence: IPC-06-10 CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: Principles of therapy and revised recommendations. MMWR 1998;47(RR-20)	Educate OHP regarding the recognition of signs, symptoms, and transmission of TB.		
b. Conduct a baseline TST, preferably by using a two-step test, for all DHCP who might have contact with persons with suspected or confirmed active TB, regardless of the risk classification of the setting. Supporting evidence: 1B	OHP with client contact should have a baseline TST (tuberculin skin test) - preferably 2 step test, upon employment. The facilities level of exposure to clients at risk of TB will determine the need for routine follow-up TST. Supporting evidence: IPC-06-10 CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: Principles of therapy and revised recommendations. MMWR 1998;47(RR-20).	Ensure OHP, who might have contact with persons with suspected or confirmed active TB, have had a baseline TST according to MTF policy.		
c. Assess each patient for a history of TB as well as symptoms indicative of TB and document on the medical history form. Supporting evidence: 1B	OHP should ask all patients if they have a history of TB disease or symptoms indicative of TB. Clients with symptoms indicative of undiagnosed active TB should be referred promptly for medical evaluation. Supporting evidence: IPC-06-10 CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: Principles of therapy and revised recommendations. MMWR 1998;47(RR-20).	Same as CDC.		

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
d. Follow CDC recommendations for 1) developing, maintaining, and implementing a written TB infection-control plan; 2) managing a patient with suspected or active TB; 3) completing a community risk-assessment to guide employee TSTs and follow-up; and 4) managing DHCP with TB disease. Supporting evidence: 1B		Follow MTF guidance and current CDC recommendations www.cdc.gov/nchstp/tb/default.htm) for: developing, maintaining, and implementing a written TB infection-control plan; managing a patient with suspected or active TB; completing a community risk-assessment to guide employee tuberculin skin tests (TST) and follow-up; and		
2. The following apply for patients known or suspected to have active TB:		Follow MTF guidelines for patients known or suspected to have active TB:		
a. Evaluate the patient away from other patients and DHCP. When not being evaluated, the patient should wear a surgical mask or be instructed to cover mouth and nose when coughing or sneezing. Supporting evidence: 1B	Clients suspected of having active TB should be isolated from other clients and other OHP, and should wear a surgical mask when not being evaluated and should be instructed to cover their mouth and nose when coughing or sneezing. Supporting evidence: IPC-06-10 CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: Principles of therapy and revised recommendations. MMWR 1998;47(RR-20).	Same as CDC.		
b. Defer elective dental treatment until the patient is noninfectious. Supporting evidence: 1B	Elective dental treatment should be deferred until there is confirmation that client does not have infectious TB, or if the client is diagnosed with active TB disease, until confirmed the client is no longer infectious. Supporting evidence: IPC-06-10 CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: Principles of therapy and revised recommendations. MMWR 1998;47(RR-20).	Same as CDC.		
c. Refer patients requiring urgent dental treatment to a previously identified facility with TB engineering controls and a respiratory protection program. Supporting evidence: 1B	Oral health care should be provided in a facility that provides airborne infection isolation (e.g. engineering controls such as TB isolation rooms, negatively pressured relative to the corridors). OHP treating clients with active TB should use respiratory protection (e.g. fit-tested, disposable N-95 respirators), as surgical facemasks do not protect against TB transmission. Supporting evidence: IPC-06-10 CDC. Prevention and treatment of tuberculosis among patients infected with human immunodeficiency virus: Principles of therapy and revised recommendations. MMWR 1998;47(RR-20).	Follow MTF guidance when emergency dental treatment is performed on a patient with active or suspected TB (e.g. wear a fit-tested, disposable N-95 respirator).		
L. Creutzfeldt-Jakob Disease (CJD) and Other Prion Diseases				
1. No recommendation is offered regarding use of special precautions in addition to standard precautions when treating known CJD or vCJD (variant CJD) patients. Potential infectivity of oral tissues in CJD or vCJD patients is an unresolved issue. Scientific data indicate the risk, if any, of sporadic CJD transmission during dental and oral surgical procedures is low to nil. Until additional information exists regarding the transmissibility of CJD or vCJD during dental procedures, special precautions in addition to standard precautions might be indicated when treating known CJD or vCJD patients; a list of such precautions is provided for consideration without recommendation (see Creutzfeldt-Jakob Disease and Other Prion Diseases). Supporting evidence: Unresolved issue	OHP's should include medical history questions regarding dura mater transplantation, and familial history of CJD and vCJD. Dental instruments and devices touching pulpal tissue (e.g. endodontic broaches and files, access opening burs) should be discarded in sharps containers after each client use. CJD is thought to be caused by infection with a prion, which is not inactivated by the standard sterilization methods used in oral health care settings. Supporting evidence: IPC-06-11	Same as CDC. A list of special precautions is provided for consideration without recommendation at: www.cdc.gov/ncidod/diseases/submenuus/sub_bse.htm	Specific CJD-specific infection control precautions, in addition to standard precautions are recommended for clients who have developed, are suspected of having developed, or are at substantially increased risk of developing CJD. These precautions include the following: a. use single-use disposable items and equipment whenever possible; b. consider difficult to clean items (e.g. diamond burs) as single-use disposable and discard after use; c. keep the instrument moist until cleaned and decontaminated to minimize the drying of tissues and body fluids on a device; d. clean instruments thoroughly and steam-autoclave at 134 degrees C for 18 minutes; e. do not use flash sterilization for processing instruments or devices.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
				Anthrax and Dental Practice: OSAP supported Guidelines No special precautions are needed. Tissue and other material from a patient potentially infected with anthrax may contain sensitive vegetative cells of the microorganism, but not be resistant spore forms. Standard precautions ("universal precautions") intended to prevent the transmission of diseases also prevent the spread of anthrax.
				SARS and the Dental Office. CDC recommends that clinicians evaluating suspected cases should apply standard precautions, airborne precautions (e.g. N-95 respirator), and contact precautions (e.g. gowns and gloves) precautions. Until the mode of transmission had been positively identified and precisely defined, eye protection also should be worn for all patient contact. Dental Personnel Protection - disposable gloves which must be changed after every patient. Chin-length plastic face shields or surgical masks and protective eyewear. Make sure the mask covers the mouth and the nose. Reusable or disposable gowns. Cleaning and disinfection - use a hospital grade disinfectant or 1:100 dilution of household bleach. Make sure the disinfectant is compatible with your dental equipment.
M. Program Evaluation				
1. Establish routine evaluation of the infection-control program, including evaluation of performance indicators, at an established frequency. Supporting evidence: II	Program evaluation should be practiced consistently across program areas, and integrated into the day-to-day management of the infection prevention and control program. A successful infection, prevention and control program depends on developing standard operating procedures, evaluating practices, routinely documenting adverse outcomes and work-related illnesses in OHP's and monitoring health care associated infections in clients. Strategies and tools can include: periodic observational assessments, checklists to document procedures, routine review of occupational exposures to bloodborne pathogens. Effective implementation requires the OHP to monitor the scientific literature. Supporting evidence: IPC-06-12 CDC. Framework for program evaluation in public health. MMWR 1999;48(RR-11).	A. Sterilization Monitoring Implement a sterilizer-monitoring program as described in this document.	Every clinic must have an infection control Standard of Practice that documents the equipment, infection control products and staff responsibilities particular to that clinic. A template is provided.	

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CDC DOCUMENT	CDA DOCUMENT	USAF DOCUMENT	CFDS DOCUMENT	OSAP DOCUMENT
		B. Inspections Conduct and document routine scheduled or unscheduled inspections of dental treatment rooms, dental laboratory and radiology areas, decontamination and sterilization areas, and locations where sterile and/or patient-care items are stored.		
		C. Waterline Monitoring Implement a waterline-monitoring program as described in this document.		
		D. Healthcare Associated Infections (HAI) Surveillance for HAI provides data useful for identifying infected patients, determining the site of infection, and identifying the factors that contribute to HAI. Information containing patient identifiers or patient care staff should be carefully handled. Data should not be used for punitive purposes, but should be viewed as an opportunity to improve patient/employee/process outcome. Surveillance goals should include: providing objective assessment of dental HAI rates, reducing morbidity and cost, establishing baseline infection n rates based on well defined case definition criteria, educating DHCP concerning data relevant to their practices, evaluating control measures designed to reduce infection rates, complying with accreditation standards, defending malpractice claims through implementation of an active surveillance program, and providing data useful in clinical research.		

LEGENDS FOR TABLE 1

Acronyms

APIC - Association for Professionals in Infection Control
BI - Biological Indicator
DHCP - Dental Health Care Professional
HAI - Health-Care-Associated Infection
HBsAG - Hepatitis B surface antigen
HBV - Hepatitis B Vaccination
Hep A - Hepatitis A
Hep B - Hepatitis B
HICPAC - Healthcare Infection Control Practices Advisory Committee
ICO - Infection Control Officer
IPC officer - Infection Prevention and Control Officer
MTF - Medical Treatment Facility
NIOSH - National Institute for Occupational Safety and Health
OHP - Oral Health Professional
OPIM - Other Potentially Infectious Materials
PI - Percutaneous Injuries
PPE - Personal Protective Equipment
SARS - Severe Acute Respiratory Syndrome

Definitions

Supporting evidence. Supporting evidence and strength of recommendation rating / reference #

CDC Recommendation Rating Scheme

Category IA. Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.

Category IB. Strongly recommended for implementation and supported by experimental, clinical, or epidemiologic studies and a strong theoretical rationale.

Category IC. Required for implementation as mandated by federal or state regulation or standard. When IC is used, a second rating can be included to provide the basis of existing scientific data, theoretical rationale, and applicability. Because of state differences, the reader should not assume that the absence of an IC implies the absence of state regulations.

Category II. Suggested for implementation and supported by suggestive clinical or epidemiologic studies or a theoretical rationale.

Unresolved issue. No recommendation. Insufficient evidence or no consensus regarding efficacy exists.

Footnote for Table 1: the serial numbers used within a cell are indicative of the numbers assigned in the organization's documents.

ACKNOWLEDGEMENT

The author is grateful for the review, inputs, and comments of CDHA Research Advisory Committee members (Barbara Long, Indu Dhir, Dianne Gallagher and Dr. Susanne Sunell), Dr. Doug Waterfield (UBC), Dr. Jennifer Cleveland (Centers for Disease Control), Lexie Martin (UBC), Susan Schmit (Vancouver Community College), Maria Tigner (Algonquin College), Simone Wartman, College of Dental Hygienists of Ontario, College of Registered Dental Hygienists of Alberta, Saskatchewan Dental Hygienists Association, thirteen CDHA members who responded to the anonymous web site consultation, and the American Dental Hygienists Association in preparing this document.

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