INFECTION CONTROL FOR THE DENTAL OFFICE

University at Buffalo
Continuing Dental Education
200G Baldy Hall 9-14-16 6-9 P.M.

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Adapted from: *Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care*
http://www.cdc.gov/hai/settings/outpatient/outpatient-care-guidelines.html

KEY 1

Key ADMINISTRATIVE RECOMMENDATIONS for Dental Settings

1. Develop and maintain infection prevention and occupational health programs.
2. Provide supplies necessary for adherence to Standard Precautions (e.g., hand hygiene products, safer devices to reduce percutaneous injuries, personal protective equipment).
3. Assign at least one individual trained in infection prevention responsibility for coordinating the program.
4. Develop and maintain written infection prevention policies and procedures appropriate for the services provided by the facility and based on evidence-based guidelines, regulations, or standards.
5. Facility has system for early detection and management of potentially infectious persons at initial points of patient encounter.

2007 CDC Isolation Precautions

KEY 2

Key Recommendations for EDUCATION AND TRAINING in Dental Settings

1. Provide job- or task-specific infection prevention education and training to all DHCP.
   a. This includes those employed by outside agencies and available by contract or on a volunteer basis to the facility.
2. Provide training on principles of both DHCP safety and patient safety.
3. Provide training during orientation and at regular intervals (e.g., annually).
4. Maintain training records according to state and federal requirements.

KEY 3

Key Recommendations for DENTAL HEALTH CARE PERSONNEL SAFETY

1. Current CDC recommendations for immunizations, evaluation, and follow-up are available. There is a written policy regarding immunizing DHCP, including a list of all required and recommended immunizations for DHCP (e.g., hepatitis B, MMR (measles, mumps, and rubella) varicella (chickenpox), Tdap (tetanus, diphtheria, pertussis).
2. All DHCP are screened for tuberculosis (TB) upon hire regardless of the risk classification of the setting.
3. Referral arrangements are in place to qualified health care professionals (e.g., occupational health program of a hospital, educational institutions, health care facilities that offer personnel health services) to ensure prompt and appropriate provision of preventive services, occupationally-related medical services, and postexposure management with medical follow-up.
4. Facility has well-defined policies concerning contact of personnel with patients when personnel have potentially transmissible conditions.

KEY 4

Key Recommendation for PROGRAM EVALUATION in Dental Settings

1. Establish routine evaluation of the infection prevention program, including evaluation of DHCP adherence to infection prevention practices.

KEY 5A

Key Recommendations for HAND HYGIENE in Dental Settings

1. Perform hand hygiene—
   a. When hands are visibly soiled.
   b. After barehanded touching of instruments, equipment, materials, and other objects likely to be contaminated by blood, saliva, or respiratory secretions.
   c. Before and after treating each patient.
   d. Before putting on gloves and again immediately after removing gloves.
2. Use soap and water when hands are visibly soiled (e.g., blood, body fluids); otherwise, an alcohol-based hand rub may be used.

KEY 5B

Key Recommendations for PERSONAL PROTECTIVE EQUIPMENT (PPE) in Dental Settings

1. Provide sufficient and appropriate PPE and ensure it is accessible to DHCP.
2. Educate all DHCP on proper selection and use of PPE.
3. Wear gloves whenever there is potential for contact with blood, body fluids, mucous membranes, non-intact skin or contaminated equipment.
   a. Do not wear the same pair of gloves for the care of more than one patient.
   b. Do not wash gloves. Gloves cannot be reused.
   c. Perform hand hygiene immediately after removing gloves.
4. Wear protective clothing that covers skin and personal clothing during procedures or activities where contact with blood, saliva, or OPIM is anticipated.
5. Wear mouth, nose, and eye protection during procedures that are likely to generate splashes or spattering of blood or other body fluids.
6. Remove PPE before leaving the work area.

KEY 5C

Key Recommendations for RESPIRATORY HYGIENE/COUGH ETIQUETTE in Dental Settings

1. Implement measures to contain respiratory secretions in patients and accompanying individuals who have signs and symptoms of a respiratory infection, beginning at point of entry to the facility and continuing throughout the visit.
   a. Post signs at entrances with instructions to patients with symptoms of respiratory infection to—
      i. Cover their mouths/noses when coughing or sneezing.
      ii. Use and dispose of tissues.
      iii. Perform hand hygiene after hands have been in contact with respiratory secretions.
   b. Provide tissues and no-touch receptacles for disposal of tissues.
   c. Provide resources for performing hand hygiene in or near waiting areas.
   d. Offer masks to coughing patients and other symptomatic persons when they enter the dental setting.
   e. Provide space and encourage persons with symptoms of respiratory infections to sit as far away from others as possible. If available, facilities may wish to place these patients in a separate area while waiting for care.
2. Educate DHCP on the importance of infection prevention measures to contain respiratory secretions to prevent the spread of respiratory pathogens when examining and caring for patients with signs and symptoms of a respiratory infection.

2007 Isolation Precautions CDC

KEY 5D

Key Recommendations for SHARPS SAFETY in Dental Settings

1. 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.
2. 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.
3. 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 non-disposable aspirating syringe).
4. Place used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers located as close as possible to the area where the items are used.

KEY 5E

Key Recommendations for SAFE INJECTION PRACTICES in Dental Settings

1. Prepare injections using aseptic technique[1] in a clean area.
2. Disinfect the rubber septum on a medication vial with alcohol before piercing.
3. Do not use needles or syringes* for more than one patient (this includes manufactured prefilled syringes and other devices such as insulin pens).
4. Medication containers (single and multidose vials, ampules, and bags) are entered with a new needle and new syringe, even when obtaining additional doses for the same patient.
5. Use single-dose vials for parenteral medications when possible.
6. Do not use single-dose (single-use) medication vials, ampules, and bags or bottles of intravenous solution for more than one patient.
7. Do not combine the leftover contents of single-use vials for later use.
8. The following apply if multidose vials are used—
   a. Dedicate multidose vials to a single patient whenever possible.
   b. If multidose vials will be used for more than one patient, they should be restricted to a centralized medication area and should not enter the immediate patient treatment area (e.g., dental operatory) to prevent inadvertent contamination.
   c. If a multidose vial enters the immediate patient treatment area, it should be dedicated for single-patient use and discarded immediately after use.
   d. Date multidose vials when first opened and discard within 28 days, unless the manufacturer specifies a shorter or longer date for that opened vial.
9. Do not use fluid infusion or administration sets (e.g., IV bags, tubings, connections) for more than one patient.

[1] A technique that prevents or reduces the spread of microorganisms from one site to another, such as from patient to DHCP, from patient to operatory surfaces, or from one operatory surface to another.

* A Note about Administering Local Dental Anesthetic: When using a dental cartridge syringe to administer local anesthesia, do not use the needle or anesthetic cartridge for more than one patient. Ensure that the dental cartridge syringe is appropriately cleaned and heat sterilized before use on another patient.

KEY 5F

Key Recommendations for STERILIZATION AND DISINFECTION OF PATIENT-CARE DEVICES for Dental Settings

1. Clean and reprocess (disinfect or sterilize) reusable dental equipment appropriately before use on another patient.
2. Clean and reprocess reusable dental equipment according to manufacturer instructions. If the manufacturer does not provide such instructions, the device may not be suitable for multi-patient use.
   a. Have manufacturer instructions for reprocessing reusable dental instruments/equipment readily available, ideally in or near the reprocessing area.
3. Assign responsibilities for reprocessing of dental equipment to DHCP with appropriate training.
4. Wear appropriate PPE when handling and reprocessing contaminated patient equipment.
5. Use mechanical, chemical, and biological monitors according to manufacturer instructions to ensure the effectiveness of the sterilization process. Maintain sterilization records in accordance with state and local regulations.

KEY 5G

Key Recommendations for ENVIRONMENTAL INFECTION PREVENTION AND CONTROL in Dental Settings

1. Establish policies and procedures for routine cleaning and disinfection of environmental surfaces in dental health care settings.
   a. Use surface barriers to protect clinical contact surfaces, particularly those that are difficult to clean (e.g., switches on dental chairs, computer equipment) and change surface barriers between patients.
   b. Clean and disinfect clinical contact surfaces that are not barrier-protected with an EPA-registered hospital disinfectant after each patient. Use an intermediate-level disinfectant (i.e., tuberculocidal claim) if visibly contaminated with blood.
2. Select EPA-registered disinfectants or detergents/disinfectants with label claims for use in health care settings.
3. Follow manufacturer instructions for use of cleaners and EPA-registered disinfectants (e.g., amount, dilution, contact time, safe use, disposal).

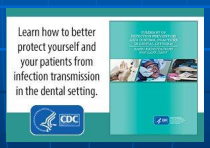
KEY 6

Key Recommendations for DENTAL UNIT WATER QUALITY in Dental Settings

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.
2. Consult with the dental unit manufacturer for appropriate methods and equipment to maintain the quality of dental water.
3. Follow recommendations for monitoring water quality provided by the manufacturer of the unit or waterline treatment product.
4. Use sterile saline or sterile water as a coolant/irrigant when performing surgical procedures.

CDC.gov

- GOOGLE:
  "CDC Oral Health" and click on this "badge"



LINK

Here is the information I obtained from the CDC to order the guides:

1. http://wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx
2. See the row with the drop down choices. The box at the very right says: "Search for Text."
3. In that box, type in the assigned number of this document: 222361.
4. This is what you should then see: http://wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx

http://wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx

In "Search for Text" Box enter:

222361

(less) NEW

Dec. 1st, 2013

Training Requirement

Revised

Hazard Communication Standard

ADA NEWS 10/16/2013

https://www.osha.gov/dsg/hazcom

HazCom GHS Training Video - New GHS Standard. Big Selection
www.mastery.com/
English & Spanish $19.95 - $24.95
View this ad's deal - valid as of yesterday

Hazard Communication - OSHA
https://www.osha.gov/dsg/**hazcom**/
Highlights: New **Hazard Communication** Wallet Card [PDF* 5.7 MB]; New December 1, 2013 Training Requirements Fact Sheet [PDF*, 289 KB]; New OSHA Brief ...
You've visited this page many times. Last visit: 9/24/13

HAZCOM Program
An effective HAZCOM program depends on the credibility of ...

Quick Cards
Hazard Communication Standard QuickCards. Safety Data Sheets ...

Hazard Communication
Modification of the Hazard Communication Standard (HCS ...

Fact Sheet
Hazard Communication Standard Final Rule - Fact Sheet.

HCS/HazCom 2012 Final Rule
Hazard Communication.

Safety Data Sheets
Safety Data Sheets. SDS QuickCard [PDF* 171 KB ...

What's New ?

- **Based on Global Harmonization System (GHS)**
- **HazCom 2012 is:**
  - **More uniform**
  - **Specification Oriented**
  - **More global (based mainly on 4 systems, including US, UN)**
  - **A system that can be adopted by any country**
    - **"Building Block" approach – all or part**
  - **Sixty-seven countries have adopted all or part of the GHS.**
- **Many companies already implementing**

Labels

- Labels must include:
  - Symbols (Pictograms)
  - Signal words "Danger" or "Warning" – emphasize hazards, level of severity
  - Hazard Statements – standard phrases

Labeling

Secondary containers used within a facility

AKA……"Transfer Containers" –

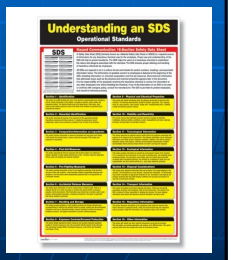
- Can contain all information on a shipped container label
- Must contain, at a minimum:
  - Product name
  - Pictures, symbols or words to convey contents and hazards
  - Enough info to find out more information

SDS

- Can't take an MSDS and call it an SDS!
- 16 specific sections, must be in order
- Sections 12-15 not being enforced
  - Include Tox/Disposal/Transport/Reg. Info
  - Outside OSHA jurisdiction
- May be paper or electronic
- Provide in English or other languages

SDS 'Sections'

Sec. 1: Identification
Sec. 2: Hazard identification
Sec. 3: Composition/information on ingredients
Sec. 4: First aid measures
Sec. 5: Fire-fighting measures;
Sec. 6: Accidental release measures;
Sec. 7: Handling and storage;
Sec. 8: Exposure control/personal protection
Sec. 9: Physical and chemical properties
Sec. 10: Stability and reactivity
Sec. 11: Toxicological information
Sec. 12*: Ecological information
Sec. 13*: Disposal considerations
Sec. 14*: Transport information
Sec. 15*: Regulatory information
Sec. 16: Other information, including date of preparation or most recent revision.



Deadlines

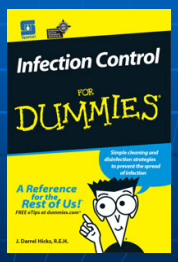

OSHA FactSheet

December 1st, 2013 Training Requirements for the Revised Hazard Communication Standard

- December 1, 2013
  - Employers must complete training on new label elements and SDS formats
- June 1, 2015
  - Manufacturers must ship only HazCom 2012 compliant SDS and labels
- December 1, 2015
  - Distributors/importers must ship products with only HazCom 2012 compliant labels, SDS

June 1, 2016*
All HAZCOM programs must be updated

Back to Infection Control



ADA NEWS
APRIL 15, 2013

FOCUS ON OKLAHOMA ORAL SURGEON PUTS SPOTLIGHT ON INFECTION CONTROL IN DENTISTRY

WHY DID OK D.O.H. COME LOOKING?

"INDEX PATIENT" w + HIV and Hep C Tests

Had No Known Risk Factors

(See N. Mexico case later)

Eventually only Hep C confirmed*

*Sept 2013 confirmed as pt-to-pt

WHAT IS ALLEGED?

IC ISSUES

- 2 separate sets of instruments with separate "cleaning method" (Known Infectious Disease v. Not Known)
- Suspected "Rust" on Instruments (for 'Disease" Patients)
- No Autoclave Spore Test in 6 Years (Manufacturer rec "monthly"/CDC rec "weekly")
- Instruments Improperly Stored (WRAP/OPEN/TRAY/BIB)

WHAT IS ALLEGED?

IC ISSUES

- Multi-Dose Drug Vials/Multiple Patients (Re-insert same needle whenever necessary)
- NO Infection Control Policies/Procedures
- No Post-Exposure Plan (NEEDLESTICKS, ETC. BUT THE POLICY WAS TO SOAK THE INJURY IN BLEACH)
- Regarding Sterilization & Drugs: "They Take Care of That, I Don't" (DR. STATES REFERRING TO DAs)

CONSEQUENCES FOR THE ACCUSED DENTIST

- 3.28.13: 30 Day License Suspension (plus anesthesia permit as well as federal and state drug permits)
- 4.12.13: Dentist Waives Hearing, License Revocation Hearing 8.16.13
- ULTIMATE SANCTIONS: No Action to License Revocation.

7,000+ Patients Offered Testing

- 4,018 tested as of June 6, 2013 (Hep B, C & HIV)
- 73 Hep C+
- 5 Hep B+
- At Least 3 HIV+
- Where Patients Exposed is Uncertain
  (Nucleic Acid Sequencing May Reveal: C=RNA, B=DNA)

*updated numbers compared to handout

One Confirmed Hep C Transmission Case CDC Sept 19, 2013

OTHER RECENT CASES

- Rhode Island
- Pennsylvania
- D.C.
- Maine ('Whistleblower')*

*see 'press release' 12/5/2013!

RHODE ISLAND CASE

Office Closed March 22, 2013 by DOH

- No Written (IC)Program
- No HBV Vaccine Records
- No BBP Training Records
- No Post Exposure Protocols in Place
- Overfilled Sharps Containers
- No 'Red Bags'
- No Utility Gloves (Instr. Cleaning)
- Inadequate Eye Protection ('own glasses')
- Metal Alginate Trays "Hanging on Wall'
- Inadequate Sterilization Monitoring & Record Keeping
- Manufacturers Inst. For sterilizer not available
- Packages overstuffed
- No EPA-Registered disinfecting products available
- Suction Devices Visibly Soiled
- Switches and Light handles not Barrier-Protected*

PA. CASE

- License suspended 4/29/13
- Did not properly clean, disinfect, sterilize devices
- DOH rec Hep-B,-C, HIV testing for pts.
- Advised staff to lie (sterilization practices)
- 2 Counts DUI Dec 2012/Failed to Report on dental license Renewal 1/2013
- No previous legal/professional issues

PA Case

Reinstated but

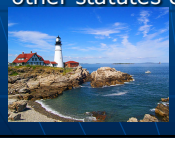
- Hire IC Consultant
- Monthly Inspections by DOH for 1 year and every other month for 4 more years!
- Monitoring by a fellow dentist

DC CASE (a 'dental center')- July 16, 2013

- 26 "Serious Violations"
- No Exposure Control Plan(BBP)
- No Training
- Lack of Proper Eye Protection (for 'sanitizing chemicals')
- Failure to offer hep B Vaccine within 10 days
- $61,600 Penalties proposed

MAINE 2.7.2013

- $72,00 Fine
- 2 Hygienists: failed to resolve IC lapses "in-house".
- 1 filed OSHA complaint
- 1 fired/Placed other on Probation
- Other requirements imposed
- "Whistleblower" Provisions of OSHA Act and 21 other statutes cited



POTENTIAL CONSEQUENCES FOR US

- Increased Questions From Patients
- Potential for Increased Vigilance/Inspections by OSHA, State Boards and State Health Departments
- Hopefully: Increased Awareness/Action by us to "Do the Right Things"

How Should We React to Patients' Concerns and Questions?

Infection Control Program Goals

- Provide a safe working environment
  - Reduce health care-associated infections
  - Reduce occupational exposures

ADA Sept 2009-POSTER

Basic Principles of Infection Control

Always Use Standard Precautions

1. Immunize against vaccine-preventable diseases
2. Perform effective hand hygiene
3. Use Personal Protective Equipment
4. Heat sterilize all reusable patient care items used intraorally
5. Use Respiratory Hygiene/Cough Etiquette
6. Prevent cross contamination with environmental asepsis and aseptic technique
7. Prevent sharps injuries by using engineering controls and safe work practices

HOW
ARE
WE DOING…..

IN DENTAL INFECTION CONTROL ???

COMPLIANCE AIDS

- **OSAP**
  - Organization for Safety, Asepsis, and Prevention
  - www.osap.org
- **ADA**
  - Adacatalog.org

OSAP

Organization for Safety, Asepsis and Prevention

OSAP Fact Sheet

The Concept:
Founded in 1984 and formally incorporated as a non-profit organization in 1986, OSAP is dentistry's resource for infection control and occupational safety and health. The organization is comprised of dental practitioners, schools, consultants and industry representatives who share an interest in this important field.

OSAP's Mission:
OSAP is dedicated to promoting infection control and related health and safety policies and practices supported by science and research. OSAP supports this commitment to healthcare workers and the public through quality education and information dissemination.

OSAP's Purposes and Commitments:
- Provide educational forums for dental healthcare professionals and the dental industry;
- Provide and monitor practical guidelines in infection control and safety;
- Interface with regulatory agencies and other organizations; and
- Promote quality research relating to infection control and safety issues.

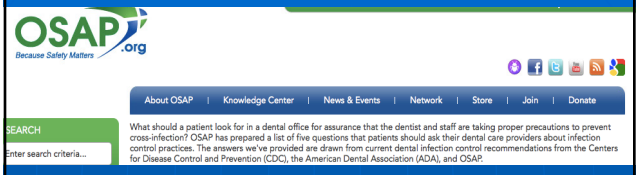
For more information on OSAP, the OSAP Foundation, and available products and services, visit

www.osap.org

Organization for Safety & Asepsis Procedures
P.O. Box 6297 ♦ Annapolis, MD 21401
1-800-298-OSAP (6727) ♦ 410-571-0003 ♦ FAX 0028
Email: *office@osap.org*

OSAP
Dentistry's Resource
for Infection Control & Safety

OSAP's 5 QUESTIONS



1. Do you heat sterilize all your instruments, including handpieces, ('drills') between patients?
2. How do you know your sterilizer is working properly?
3. Do you change your gloves for every patient?
4. Do you disinfect the surfaces in the operatory between patients?
5. If you are unclear on, or uncomfortable with, the precautions your dental practice takes to protect you during treatment, talk to your dentist , or dental team member, about your concerns and ask to see the office's instrument processing area.

ADA COMPLIANCE AIDS

www.adacatalog.org

OBJECTIVES

- Satisfy 6 CORE ELEMENTS of NYS Infection Control Training
- Understand OSHA Standards & Requirements
- Understand CDC Recommendations
- How to Comply with Requirements in as Practical Way as Possible
- Provide a Safe Working & Treatment Environment

It is our responsibility to adhere to scientifically accepted principles and practices of infection control and to monitor the performance of those for whom we (the professional) are responsible

NY CORE #1

We must understand modes & mechanisms of transmission of pathogenic organisms in the healthcare setting and implement strategies for prevention and control

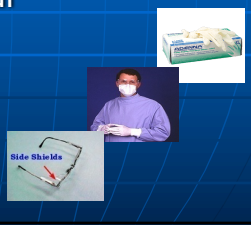
NY CORE #2

We must utilize engineering and work practice controls to reduce the opportunity for patient and healthcare worker contact with potentially infectious material or bloodborne pathogens

NY CORE #3

We must be able to select & use barriers and/or personal protective equipment for preventing patient & healthcare worker contact with potentially infectious material

NY CORE #4



We need to create and maintain a safe environment for patient care through application of infection control principles and practices for cleaning, disinfection and sterilization

NY CORE #5

We must discuss prevention & management of infectious or communicable diseases in healthcare workers

NY CORE #6

Infection control training is mandated every four (4) years for dentists and dental hygienists licensed in New York State.

OSHA STANDARDS

- Bloodborne Pathogens, 1991
- Hazard Communication Standard
- Others

DISTINCTION

State law adds patient protections where OSHA regulations center on employee protections

OSHA Poster 3165

- WWW.OSHA.GOV/ PUBLICATIONS/ POSTER
- Or just "Google" 'OSHA Poster' and you'll see a link to 3165 poster
- Replaces older versions as 2203 which DO NOT need to be replaced

Infection Control Checklist as required by OSHA BB Pathogens Standard

- Exposure Control Plan and Other Written Documents
- Training of the Office Staff
- Hepatitis B Vaccination
- Postexposure Medical Evaluation & Follow-Up
- General Methods and Aseptic Techniques

OSHA Checklist Continued (BB Pathogens)

- Protective Barriers
- Management of Regulated Waste
- Decontamination
- Instrument Processing
- Laboratory Asepsis
- Radiographic Asepsis
- Record Keeping

OSHA

Components of OSHA HazCom Standard

- Hazard Determination
- Written Hazard Communication Program
- Inventory & List Hazardous Chemicals
- Labels & Other Forms of Warning
- MSDS
- Employee Information & Training

OSHA

- New Rules Roll Out between 12.1.13 and 6.1.15 (Pictograms)

Guidelines for Infection Control in Dental Health-Care Settings 2003

CDC. *MMWR* 2003;52(No. RR-17)
http://www.cdc.gov/oralhealth/infectioncontrol/guidelines/index.htm

SUMMARY CDC 2003 Recommendations

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

- Personnel Health Elements
- Prevention of Transmission of BB Pathogens
- Prevention of Exposures to Blood & Other Potentially Infectious Material
- Hand Hygiene
- PPE
- Contact Dermatitis & Latex Hypersensitivity

CDC Recommendations Cont'd

- Sterilization & Disinfection of Patient Care Items
- Environmental Infection Control
- Dental Unit Waterlines (DUWL), Biofilms, and Water Quality
- Boil-Water Notices
- Dental Handpieces & Other Devices Attached to Air & Water Lines

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

CDC Recommendations Cont'd

- Dental Radiology
- Aseptic Technique for Parenteral Medications
- Single-Use (Disposable) Devices
- Oral Surgical Procedures
- Handling of Extracted Teeth
- Dental Lab
- TB
- Program Evaluation

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

Infection Control in Dental Health-Care Settings: An Overview

- Background
- Personnel Health Elements
- Bloodborne Pathogens
- Hand Hygiene
- Personal Protective Equipment
- Latex Hypersensitivity/Contact Dermatitis
- Sterilization and Disinfection
- Environmental Infection Control
- Dental Unit Waterlines
- Special Considerations
- Program Evaluation

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

Guidelines for Infection Control in Dental Health-Care Settings—2003. *MMWR 2003*; Vol. 52, No. RR-17.

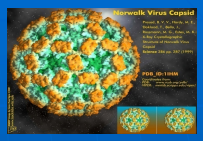
Why Is Infection Control Important in Dentistry?

- Both patients and dental health care personnel (DHCP) can be exposed to pathogens
- Contact with blood, oral and respiratory secretions, and contaminated equipment occurs
- Proper procedures can prevent transmission of infections among patients and DHCP

Modes of Transmission

- Direct contact with blood or body fluids
- Indirect contact with a contaminated instrument or surface
- Contact of mucosa of the eyes, nose, or mouth with droplets or spatter
- Inhalation of airborne microorganisms

PATHOGENS

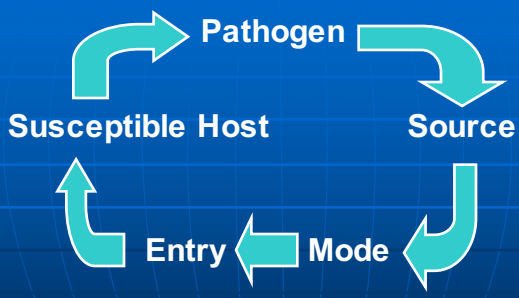


Pathogens are microorganisms that can cause disease in human

EXAMPLES:

- Virus: Hepatitis, HSV, HIV, Influenza
- Bacteria: Anthrax, Staph, Strep, ANUG, TB, Lyme Disease
- Fungi: Candidiasis, Ringworm

Chain of Infection



PORTALS OF EXIT

- Coughing
- Sneeze
- Oral Draining Lesion
- Draining Skin Lesion

Standard Precautions

- Apply to all patients
- Integrate and expand Universal Precautions to include organisms spread by blood and also
  - Body fluids, secretions, and excretions except sweat, whether or not they contain blood
  - Non-intact (broken) skin
  - Mucous membranes

Elements of Standard Precautions

- Handwashing
- Use of gloves, masks, eye protection, and gowns
- Patient care equipment
- Environmental surfaces
- Injury prevention

Personnel Health Elements

Personnel Health Elements of an Infection Control Program

- Education and training
- Immunizations
- Exposure prevention and postexposure management
- Medical condition management and work-related illnesses and restrictions
- Health record maintenance

IMMUNIZATIONS

For Example:

- NY Public Health Law requires health workers with patient contact to be immunized for Measles and German Measles (Rubella)
- Additionally, annual Mantoux Tuberculin Skin Test is required for private office HCW (q6-months for health care facilities)

TB

- Dental HC Provider with (+)TB Mantoux Test requires a Chest x-ray
- If (+), MD consult required for possible drug therapy
- If(-), repeat chest x-rays not needed

Bloodborne Pathogens

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

OSHA

Preventing Transmission of Bloodborne Pathogens

Bloodborne viruses such as hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV)

- Are transmissible in health care settings
- Can produce chronic infection
- Are often carried by persons unaware of their infection

Potential Routes of Transmission of Bloodborne Pathogens

Patient → DHCP

DHCP → Patient

Patient → Patient*

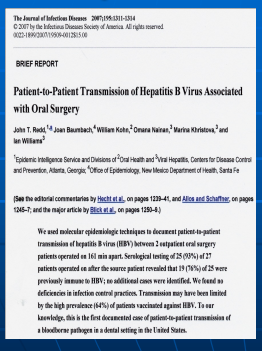
Factors Influencing Occupational Risk of Bloodborne Virus Infection

- Frequency of infection among patients
- Risk of transmission after a blood exposure (i.e., type of virus)
- Type and frequency of blood contact

Average Risk of Bloodborne Virus Transmission after Needlestick

Source	Risk
HBV	
$HBsAg^+$ and $HBeAg^+$	22.0%-31.0% clinical hepatitis; 37%-62% serological evidence of HBV infection
$HBsAg^+$ and $HBeAg^-$	1.0%-6.0% clinical hepatitis; 23%-37% serological evidence of HBV infection
HCV	1.8% (0%-7% range)
HIV	0.3% (0.2%-0.5% range)

PATIENT-TO-PATIENT Hepatitis-B Transmission 2002



The Journal of Infectious Diseases 2007;195:1311–1314
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0022-1899/2007/19509-0012$15.00

BRIEF REPORT

Patient-to-Patient Transmission of Hepatitis B Virus Associated with Oral Surgery

John T. Redd,[1,a] Joan Baumbach,[4] William Kohn,[2] Omana Nainan,[3] Marina Khristova,[3] and Ian Williams[3]

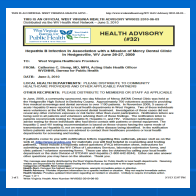
[1]Epidemic Intelligence Service and Divisions of [2]Oral Health and [3]Viral Hepatitis, Centers for Disease Control and Prevention, Atlanta, Georgia; [4]Office of Epidemiology, New Mexico Department of Health, Santa Fe

(See the editorial commentaries by Hecht et al., on pages 1239–41, and Alter and Schaffner, on pages 1245–7, and the major article by Block et al., on pages 1293–9.)

We used molecular epidemiologic techniques to document patient-to-patient transmission of hepatitis B virus (HBV) between 2 outpatient oral surgery patients operated on 161 min apart. Serological testing of 25 (93%) of 27 patients operated on after the source patient revealed that 19 (76%) of 25 were previously immune to HBV; no additional cases were identified. We found no deficiencies in infection control practices. Transmission may have been limited by the high prevalence (64%) of patients vaccinated against HBV. To our knowledge, this is the first documented case of patient-to-patient transmission of a bloodborne pathogen in a dental setting in the United States.

- **Journal of Infectious Diseases**
- 2007;195:1311-1314 (21 March, 2007)
- 2 multiple-Exo Pts. Treated 161 min. apart

2009


HEALTH ADVISORY
(#32)

W.V. Dept. Public Health

JADA OCTOBER 2013

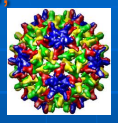
Transmission of HBV to 3 patients and 2 volunteers in a portable dental clinic setting
(None had been vaccinated)

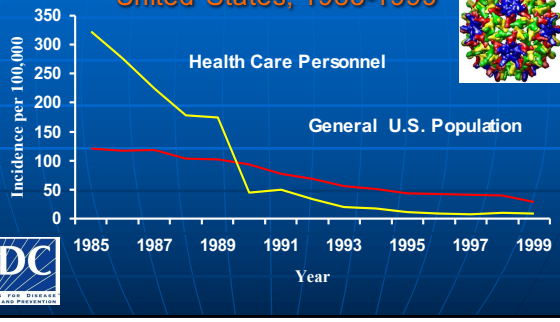
Concentration of HBV in Body Fluids

High	Moderate	Low/None
Blood	Semen	Urine
Serum	Vaginal Fluid	Feces
Wound exudates	Saliva	Sweat
		Tears
		Breast Milk

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

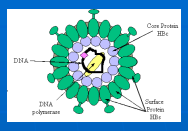
Estimated Incidence of HBV Infections Among HCP and General Population, United States, 1985-1999





CDC CENTERS FOR DISEASE CONTROL AND PREVENTION

Hepatitis B Vaccine



CDC CENTERS FOR DISEASE CONTROL AND PREVENTION

- Vaccinate all DHCP who are at risk of exposure to blood (must offer within 10 days of initial assignment at no cost)
- Provide access to qualified health care professionals for administration and follow-up testing
- Test for anti-HBs 1 to 2 months after 3rd dose

DECLINATION

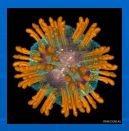
Employees refusing Hepatitis B vaccination must sign a declination form

Employee must still be provided vaccination at no cost if decide in future that they want it after declination

Transmission of HBV from Infected DHCP to Patients

- Nine clusters of transmission from dentists and oral surgeons to patients, 1970–1987
- Eight dentists tested for HBeAg were positive
- Lack of documented transmissions since 1987 may reflect increased use of gloves and vaccine
- One case of patient-to-patient transmission, 2003 and recent report of 2009 W.V. case(5)

Occupational Risk of HCV Transmission among HCP



- Inefficiently transmitted by occupational exposures
- Three reports of transmission from blood splash to the eye
- Report of simultaneous transmission of HIV and HCV after non-intact skin exposure
- 1st Dental Transmission 2013

HCV Infection in Dental Health Care Settings

- Prevalence of HCV infection among dentists similar to that of general population (~ 1%-2%)
- No reports of HCV transmission from infected DHCP to patients or from patient to patient
- Risk of HCV transmission appears very low (2%)

Transmission of HIV from Infected Dentists to Patients

- Only one documented case of HIV transmission from an infected dentist to patients
- No transmissions documented in the investigation of 63 HIV-infected HCP (including 33 dentists or dental students)

Health Care Workers with Documented and Possible Occupationally Acquired HIV/AIDS

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

Healthcare Personnel with Documented and Possible Occupationally Acquired HIV Infection, by Occupation, 1981-2010

Occupation	Documented	Possible
Nurse	24	36
Laboratory worker, clinical	16	17
Physician, nonsurgical	6	13
Laboratory technician, nonclinical	3	-
Housekeeper/maintenance worker	2	14
Technician, surgical	2	2
Embalmer/morgue technician	1	2
Health aide/attendant	1	15
Respiratory therapist	1	2
Technician, dialysis	1	3
Dental worker, including dentist	-	6
Emergency medical technician/paramedic	-	12
Physician, surgical	-	6
Other technician/therapist	-	9
Other healthcare occupation	-	6
Total	**57**	**143**

This graph is from the article by Do AN et al. Occupationally acquired HIV infection: national case surveillance data during 20 years of the HIV epidemic in the *U.S. Infect Control Hosp Epidemiol* 2003;24:86-96.

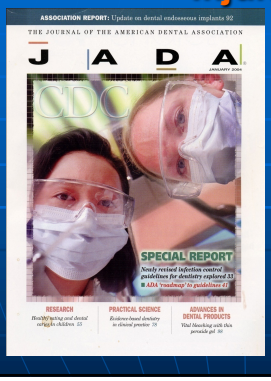
Risk Factors for HIV Transmission after Percutaneous Exposure to HIV-Infected Blood
CDC Case-Control Study

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

- Deep injury
- Visible blood on device
- Needle placed in artery or vein
- Terminal illness in source patient

Source: Cardo, et al., *N England J Medicine* 1997;337:1485-90.

Guarding Against Percutaneous Injuries



JADA
Feb 2007

Characteristics of Percutaneous Injuries Among DHCP


- Reported frequency among general dentists has declined
- Caused by burs, syringe needles, other sharps
- Occur outside the patient's mouth
- Involve small amounts of blood
- Among oral surgeons, occur more frequently during fracture reductions and procedures involving wire

Exposure Prevention Strategies

- Engineering controls
- Work practice controls
- Administrative controls

Engineering Controls

- Isolate or remove the hazard
- Examples:
  - Sharps container
  - Medical devices with injury protection features (e.g., self-sheathing needles)

Work Practice Controls

- Change the manner of performing tasks
- Examples include:
  - Using instruments instead of fingers to retract or palpate tissue
  - One-handed needle recapping

Administrative Controls

- Policies, procedures, and enforcement measures
- Placement in the hierarchy varies by the problem being addressed
  - Placed before engineering controls for airborne precautions (e.g., TB)

OSHA BB PATHOGENS STANDARD
Compliance Steps

- Review the Standard
- Prepare Written Exposure Control Plan
- Train Employees
- Maintain Records
- Provide Employees for Compliance:
  - Hep B Vaccination
  - PPE & Engineering Controls
  - Establish Work Practices & Decontamination Procedures
  - Post Exposure Plan
  - Provide Biohazard Communication

EXPOSURE CONTROL PLAN

- OSHA requires exposure determination by employee position (High v. Low Risk)
- The Plan is available to employees and OSHA
- Plan includes documented annual (and new employee) training

WRITTEN EXPOSURE CONTROL PLAN

1. Exposure Determination/Who is Covered
2. Schedule of Implementation (How/When)
   - Communication of Hazards to Employees
   - Hep B Vaccination
   - Post Exposure Evaluation & Follow Up
   - Record Keeping
   - Methods of Compliance (Engineering, Work Practice Controls, PPE, Housekeeping)

EXP CONTROL PLAN (cont'd)

3. Evaluation of Exposure Incidents
4. Prevention of Sharps Injuries
   - Describe how newer devices that may reduce exposure will be ID' d and considered for use
   - Describe methods to evaluate the devices & results of the evaluations
   - Describe justification as to why/why not a device is selected for use
   - Describe how those directly involved in patient care are involved in this ID, evaluation & selection process

Post-exposure Management

- Wound management
- Exposure reporting
- Assessment of infection risk
  - Type and severity of exposure
  - Bloodborne status of source person
  - Susceptibility of exposed person

- NY STATE PEP line ('google')

1-888-448-4911

Hand Hygiene

Why Is Hand Hygiene Important?

-Hands are the most common mode of pathogen transmission

-Reduce spread of antimicrobial resistance

-Prevent health care-associated infections

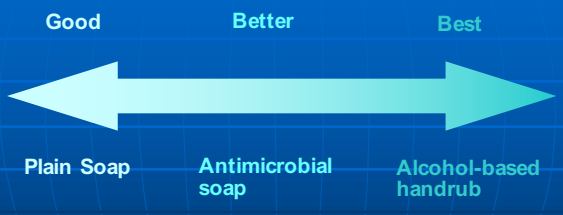
Hands Need to be Cleaned When:

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

Hand Hygiene Definitions

- Handwashing
  - Washing hands with plain soap and water
- Antiseptic handwash
  - Washing hands with water and soap or other detergents containing an antiseptic agent
- Alcohol-based handrub
  - Rubbing hands with an alcohol-containing preparation
- Surgical antisepsis
  - Handwashing with an antiseptic soap or an alcohol-based handrub before operations by surgical personnel

Efficacy of Hand Hygiene Preparations in Reduction of Bacteria



Source:
http://www.cdc.gov/handhygie/materials.htm

Special Hand Hygiene Considerations

- Use hand lotions to prevent skin dryness
- Consider compatibility of hand care products with gloves (e.g., mineral oils and petroleum bases may cause early glove failure)
- Keep fingernails short
- Avoid artificial nails
- Avoid hand jewelry that may tear gloves

Personal Protective Equipment

PERSONAL PROTECTIVE EQUIPMENT

- A major component of Standard Precautions
- Protects the skin and mucous membranes from exposure to infectious materials in spray or spatter
- Should be removed when leaving treatment areas
- No cost to employee

Masks, Protective Eyewear, Face Shields

- Wear a surgical mask and either eye protection with solid side shields or a face shield to protect mucous membranes of the eyes, nose, and mouth
- Change masks between patients
- Clean reusable face protection between patients; if visibly soiled, clean and disinfect

Protective Clothing

- Wear gowns, lab coats, or uniforms that cover skin and personal clothing likely to become soiled with blood, saliva, or infectious material
- Change if visibly soiled
- Remove all barriers before leaving the work area

Gloves

- Minimize the risk of health care personnel acquiring infections from patients
- Prevent microbial flora from being transmitted from health care personnel to patients
- Reduce contamination of the hands of health care personnel by microbial flora that can be transmitted from one patient to another
- Are not a substitute for handwashing!

Recommendations for Gloving

- Wear gloves when contact with blood, saliva, and mucous membranes is possible
- Remove gloves after patient care
- Wear a new pair of gloves for each patient

Latex Hypersensitivity and Contact Dermatitis

CDC
Centers for Disease Control and Prevention

Latex Allergy

- Type I hypersensitivity to natural rubber latex proteins
- Reactions may include nose, eye, and skin reactions
- More serious reactions may include respiratory distress–rarely shock or death

Contact Dermatitis

- Irritant contact dermatitis
  - Not an allergy
  - Dry, itchy, irritated areas
- Allergic contact dermatitis
  - Type IV delayed hypersensitivity
  - May result from allergy to chemicals used in glove manufacturing

General Recommendations Contact Dermatitis and Latex Allergy

- Educate DHCP about reactions associated with frequent hand hygiene and glove use
- Get a medical diagnosis
- Screen patients for latex allergy
- Ensure a latex-safe environment
- Have latex-free kits available (dental and emergency)

Hamann, et al JADA 4/2005

Skin Testing:
"Prick"/ Type I
v.
"Patch"/ Type IV

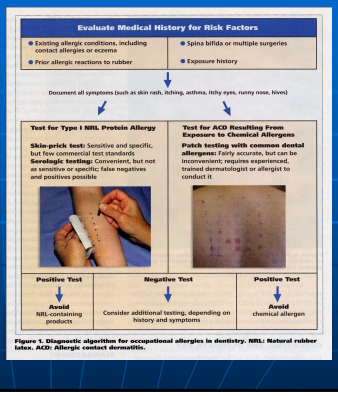


Figure 1. Diagnostic algorithm for occupational allergies in dentistry. NRL: Natural rubber latex. ACD: Allergic contact dermatitis.

Sterilization and Disinfection of Patient Care Items




Critical Instruments

- Penetrate mucous membranes or contact bone, the bloodstream, or other normally sterile tissues (of the mouth)
- Heat sterilize between uses or use sterile single-use, disposable devices
- Examples include surgical instruments, scalpel blades, periodontal scalers, and surgical dental burs

Semi-critical Instruments

- Contact mucous membranes but do not penetrate soft tissue
- Heat sterilize or high-level disinfect
- Examples: Dental mouth mirrors, amalgam condensers, and dental handpieces

Noncritical Instruments and Devices

- Contact intact skin
- Clean and disinfect using a low to intermediate level disinfectant
- Examples: X-ray heads, facebows, pulse oximeter, blood pressure cuff

Instrument Processing Area

- Use a designated processing area to control quality and ensure safety
- Divide processing area into work areas
  - Receiving, cleaning, and decontamination
  - Preparation and packaging
  - Sterilization
  - Storage

Automated Cleaning

- Ultrasonic cleaner
- Instrument washer
- Washer-disinfector

Manual Cleaning

- Soak until ready to clean
- Wear heavy-duty utility gloves, mask, eyewear, and protective clothing

Preparation and Packaging

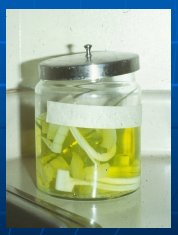
- Critical and semi-critical items that will be stored should be wrapped or placed in containers before heat sterilization
- Hinged instruments opened and unlocked
- Place a chemical indicator inside the pack
- Wear heavy-duty, puncture-resistant utility gloves

Heat-Based Sterilization

- Steam under pressure (autoclaving)
  - Gravity displacement
  - Pre-vacuum
- Dry heat
- Unsaturated chemical vapor

Liquid Chemical Sterilant/Disinfectants

- Only for heat-sensitive critical and semi-critical devices
- Powerful, toxic chemicals raise safety concerns
- Heat tolerant or disposable alternatives are available



Sterilization Monitoring Types of Indicators

- Mechanical
  - Measure time, temperature, pressure
- Chemical
  - Change in color when physical parameter is reached
- Biological (spore tests)
  - Use biological spores to assess the sterilization process directly

Storage of Sterile and Clean Items and Supplies

- Use date- or event-related shelf-life practices
- Examine wrapped items carefully prior to use
- When packaging of sterile items is damaged, re-clean, re-wrap, and re-sterilize
- Store clean items in dry, closed, or covered containment

Environmental Infection Control

Environmental Surfaces

- May become contaminated
- Not directly involved in infectious disease transmission
- Do not require as stringent decontamination procedures

Categories of Environmental Surfaces

- Clinical contact surfaces
  - High potential for direct contamination from spray or spatter or by contact with DHCP's gloved hand
- Housekeeping surfaces
  - Do not come into contact with patients or devices
  - Limited risk of disease transmission

Intermediate Level Disinfectants

QUAT+ALCOHOL

PHENOL

General Cleaning Recommendations

- Use barrier precautions (e.g., heavy-duty utility gloves, masks, protective eyewear) when cleaning and disinfecting environmental surfaces
- Physical removal of microorganisms by cleaning is as important as the disinfection process
- Follow manufacturer's instructions for proper use of EPA-registered hospital disinfectants
- Do not use sterilant/high-level disinfectants on environmental surfaces

Cleaning Clinical Contact Surfaces

- Risk of transmitting infections greater than for housekeeping surfaces
- Surface barriers can be used and changed between patients

OR

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

CDC
Centers for Disease Control and Prevention

Cleaning Housekeeping Surfaces

CDC

- Routinely clean with soap and water or an EPA-registered detergent/hospital disinfectant routinely
- Clean mops and cloths and allow to dry thoroughly before re-using
- Prepare fresh cleaning and disinfecting solutions daily and per manufacturer recommendations

FOOD & DRINK

Eating, Drinking, Application of Make-up & Handling of Contact Lenses is Prohibited in areas where there is a reasonable likelihood of Occupational Exposure

- Direct from OSHA BB Pathogens Standard
- Cited violation on clinic inspections

OSHA

Medical Waste

- Medical Waste: Not considered infectious, thus can be discarded in regular trash
- Regulated Medical Waste: Poses a potential risk of infection during handling and disposal

REGULATED WASTE

- Liquid or Semi-Liquid Blood or OPIM
- Contaminated Items that would Release Blood or OPIM if Compressed
- Items Caked with Dried Blood/OPIM
- Contaminated Sharps
- Extracted Teeth/Tissues

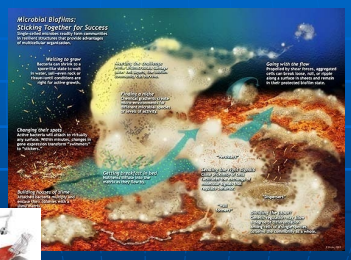
OSHA

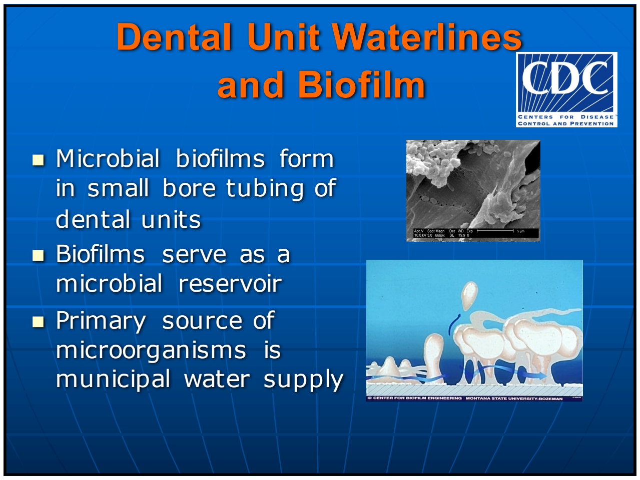
Regulated Medical Waste Management

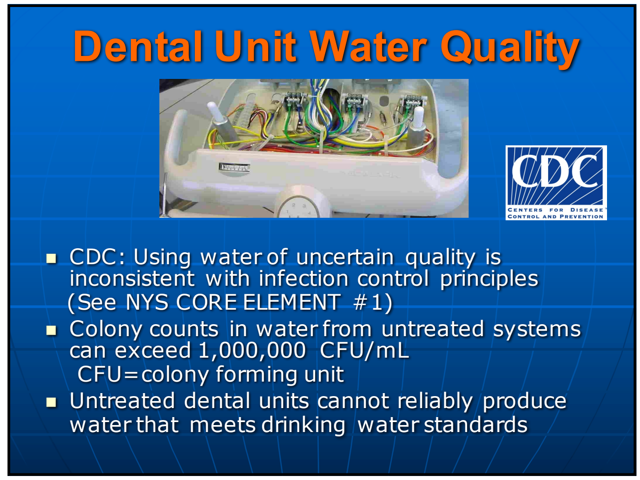
- Properly labeled containment to prevent injuries and leakage
- Medical wastes are "treated" in accordance with state and local EPA regulations
- Processes for regulated waste include autoclaving and incineration

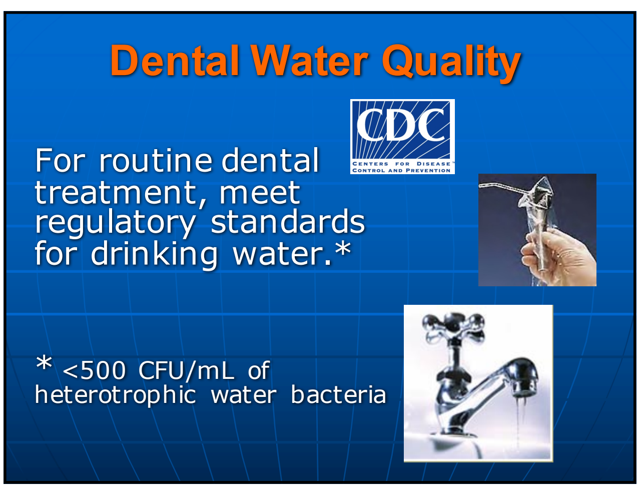
Dental Unit Waterlines, Biofilm, and Water Quality

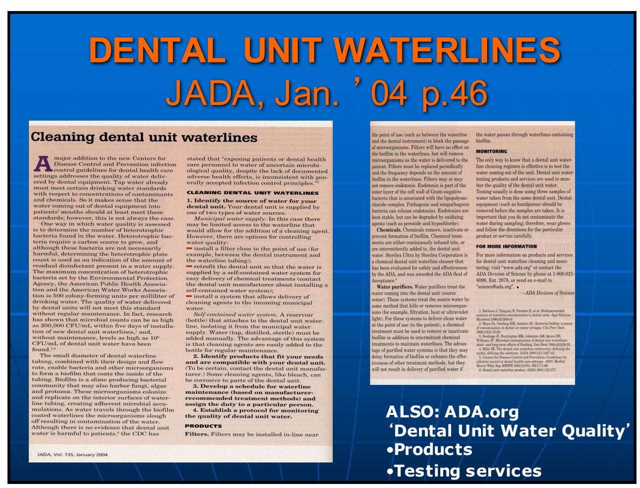
CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION




Dental Unit Waterlines and Biofilm
CDC
Centers for Disease Control and Prevention
Microbial biofilms form in small bore tubing of dental units
Biofilms serve as a microbial reservoir
Primary source of microorganisms is municipal water supply
© CENTER FOR BIOFILM ENGINEERING MONTANA STATE UNIVERSITY-BOZEMAN


Dental Unit Water Quality
CDC
Centers for Disease Control and Prevention
CDC: Using water of uncertain quality is inconsistent with infection control principles (See NYS CORE ELEMENT #1)
Colony counts in water from untreated systems can exceed 1,000,000 CFU/mL
CFU=colony forming unit
Untreated dental units cannot reliably produce water that meets drinking water standards


Dental Water Quality
CDC
Centers for Disease Control and Prevention
For routine dental treatment, meet regulatory standards for drinking water.*
* <500 CFU/mL of heterotrophic water bacteria


DENTAL UNIT WATERLINES
JADA, Jan. '04 p.46
Cleaning dental unit waterlines
ALSO: ADA.org
'Dental Unit Water Quality'
•Products
•Testing services

UB/SDM

BACTERIAL WATER CULTURES 12/2009

- 1A1 12,000*
- 1B1 198,000
- 1C1 180,000
- 1D1 70,000
- 1E1 170,000

- AVG: 126,000*

*CFUs (Colony Forming Units)

Drinking Water < 500 CFUs

UB: Self Contained Water with Continuous Treatment

- ICX Tablets (Adec)*
  - Sodium Percarbonate
  - N-Alkyl dimethyl benzyl ammonium chloride
  - N-Alkyl dimethyl ethylbenzyl ammonium chloride
  - Silver Nitrate

*Sterilex Ultra (Sterilex Corp.) 'SHOCK' recommended if water quality inadequate at start

STERILEX ULTRA

- Liquid or Powder
- Contents:
  - Hydrogen Peroxide
  - N-Alkyl dimethyl benzyl ammonium chloride
  - N-Alkyl dimethyl ethylbenzyl ammonium chloride

3 TEST PROTOCOLS

- I. Daily Treatment Chemical *Only(ICX)-'CONTROLS'*

- II. 1-Day Shock Treatment plus Daily Treatment
- III. 3-Day Shock Treatment plus Daily Treatment

2-Week Treatment Period (15 Days)

RESULTS

ICX-Only

3 Units * Avg 19,333 cfu
(Range 12,000-29,000)

3-Day Shock

4 Units 0 cfu

1-Day Shock

3 Units 0 cfu

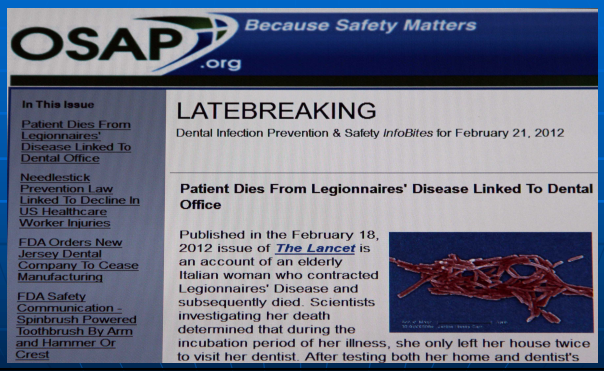
*1 of 3 was a 170,000 CFU 'pretest' unit

SDM:Summer of 2010

- Installation of 400+ Independent Reservoir Bottles
- 'Shock' X 1-Day
- Continuous Treatment (ICX)
- Follow-up Testing
- "Shock" Schedule

Summer 2015
De-Ionized Water in Bottles

LANCET: February 2012


OSAP.org Because Safety Matters

In This Issue

Patient Dies From Legionnaires' Disease Linked To Dental Office

Needlestick Prevention Law Linked To Decline In US Healthcare Worker Injuries

FDA Orders New Jersey Dental Company To Cease Manufacturing

FDA Safety Communication - Spinbrush Powered Toothbrush By Arm and Hammer Or Crest

LATEBREAKING

Dental Infection Prevention & Safety *InfoBites* for February 21, 2012

Patient Dies From Legionnaires' Disease Linked To Dental Office

Published in the February 18, 2012 issue of *The Lancet* is an account of an elderly Italian woman who contracted Legionnaires' Disease and subsequently died. Scientists investigating her death determined that during the incubation period of her illness, she only left her house twice to visit her dentist. After testing both her home and dentist's

Sterile Irrigating Solutions

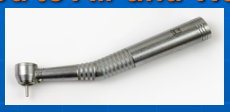
- Use sterile saline or sterile water as a coolant/irrigator when performing surgical procedures

- Use devices designed for the delivery of sterile irrigating fluids

Special Considerations

- Dental handpieces and other devices attached to air and waterlines
- Dental radiology
- Aseptic technique for parenteral medications
- Single-use (disposable) Devices
- Preprocedural mouth rinses
- Oral surgical procedures
- Handling biopsy specimens
- Handling extracted teeth
- Laser/electrosurgery plumes or surgical smoke
- Dental laboratory
- *Mycobacterium tuberculosis*
- Creutzfeldt-Jacob Disease (CJD) and other prion-related diseases

Dental Handpieces and Other Devices Attached to Air and Waterlines



- Clean and heat sterilize intraoral devices that can be removed from air and waterlines
- Follow manufacturer's instructions for cleaning, lubrication, and sterilization
- Do not use liquid germicides or ethylene oxide

Components of Devices Permanently Attached to Air and Waterlines

- Do not enter patient's mouth but may become contaminated
- Use barriers and change between uses
- Clean and intermediate-level disinfect the surface of devices if visibly contaminated

Saliva Ejectors

- Previously suctioned fluids might be retracted into the patient's mouth when a seal is created
- Do not advise patients to close their lips tightly around the tip of the saliva ejector

Dental Radiology

- Wear gloves and other appropriate personal protective equipment as necessary
- Heat sterilize heat-tolerant radiographic accessories
- Transport and handle exposed radiographs so that they will not become contaminated
- Avoid contamination of developing equipment
- "DUAL" Recommendation for Digital Sensors (44% failure if barriers alone)

RADIOLOGY

- Exposed films dried with gauze or paper towel before transport to processing area
- Equipment protected with surface barriers and changed for each patient
- Surfaces unable to be wrapped are cleaned and disinfected after each patient

Parenteral Medications

- Definition: Medications that are injected into the body
- Cases of disease transmission have been reported
- Handle safely to prevent transmission of infections

Precautions for Parenteral Medications

- IV tubings, bags, connections, needles, and syringes are single-use, disposable
- Single dose vials
  - Do not administer to multiple patients even if the needle on the syringe is changed
  - Do not combine leftover contents for later use

Single-Use (Disposable) Devices

- Intended for use on one patient during a single procedure
- Usually not heat-tolerant
- Cannot be reliably cleaned
- Examples: Syringe needles, prophylaxis cups, and plastic orthodontic brackets

Preprocedural Mouth Rinses

- Antimicrobial mouth rinses prior to a dental procedure
  - Reduce number of microorganisms in aerosols/spatter
  - Decrease the number of microorganisms introduced into the bloodstream
- Unresolved issue–no evidence that infections are prevented

Oral Surgical Procedures

- Present a risk for microorganisms to enter the body
- Involve the incision, excision, or reflection of tissue that exposes normally sterile areas of the oral cavity
- Examples:
  - Biopsy
  - Perio surgery
  - Implant surgery
  - Apical surgery
  - Surgical extractions

Precautions for Surgical Procedures

Surgical Scrub

Sterile Irrigating Solutions

Sterile Surgeon's Gloves

CDC Guidelines for IC in Dental Healthcare Settings-2003 (p29)

- Sterile solutions (sterile saline or sterile water) should be used as coolant/irrigation in the performance of oral surgical procedures……..

  conventional dental units cannot reliably deliver sterile water even when equipped with independent water reservoirs

AquaSept

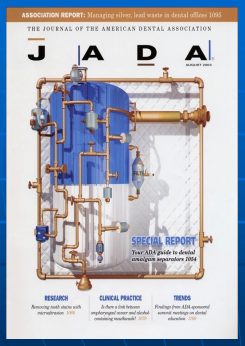
Handling Biopsy Specimens

- Place biopsy in sturdy, leakproof container
- Avoid contaminating the outside of the container
- Label with a biohazard symbol

Extracted Teeth

- Considered regulated medical waste
  - Do not incinerate extracted teeth containing amalgam
  - Clean and disinfect before sending to lab for shade comparison
- Can be given back to patient

AMALGAM SEPARATORS



- **JADA August 2003**
  pp.1054-1065
  Purchasing, Installing and Operating Dental Amalgam Separators. McManus, et al.
- **JADA July 2006**
  pp.999-1005
  Evaluating Amalgam Separators Using an International Standard. Batchu, et al.

Handling Extracted Teeth in Educational Settings

- Remove visible blood and debris
- Maintain hydration
- Autoclave (teeth with no amalgam)
- Use Standard Precautions

Laser/Electrosurgery Plumes and Surgical Smoke

- Destruction of tissue creates smoke that may contain harmful by-products
- Infectious materials (HSV, HPV) may contact mucous membranes of nose
- No evidence of HIV/HBV transmission
- Need further studies
- CDC has NOT made specific recommendations

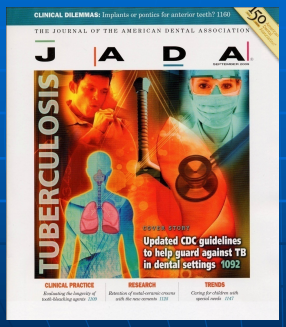
Dental Laboratory

- Dental prostheses, appliances, and items used in their making are potential sources of contamination
- Handle in a manner that protects patients and DHCP from exposure to microorganisms

Dental Laboratory

- Clean and disinfect prostheses and impressions
- Wear appropriate PPE until disinfection has been completed
- Clean and heat sterilize heat-tolerant items used in the mouth
- Communicate specific information about disinfection procedures

TB JADA Sept 2009



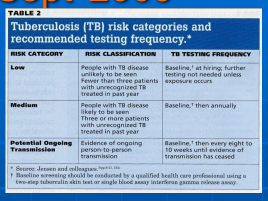


TABLE 2

Tuberculosis (TB) risk categories and recommended testing frequency.*

RISK CATEGORY	RISK CLASSIFICATION	TB TESTING FREQUENCY
Low	People with TB disease unlikely to be seen Fewer than three patients with unrecognized TB treated in past year	Baseline,† at hiring; further testing not needed unless exposure occurs
Medium	People with TB disease likely to be seen Three or more patients with unrecognized TB treated in past year	Baseline,† then annually
Potential Ongoing Transmission	Evidence of ongoing person-to-person transmission	Baseline,† then every eight to 10 weeks until evidence of transmission has ceased

* Source: Jensen and colleagues.

† Baseline screening should be conducted by a qualified health care professional using a two-step tuberculin skin test or single blood assay interferon gamma release assay.

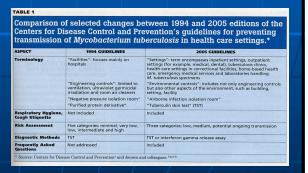


TABLE 1

Comparison of selected changes between 1994 and 2005 editions of the Centers for Disease Control and Prevention's guidelines for preventing transmission of *Mycobacterium tuberculosis* in health care settings.*

ASPECT	1994 GUIDELINES	2005 GUIDELINES
Terminology	"Facilities": focuses mainly on hospitals "Engineering controls": limited to ventilation, ultraviolet germicidal irradiation (UVGI), and filtration "Negative pressure isolation room" "Purified protein derivative"	"Settings": term encompasses inpatient settings, outpatient settings, home care, long-term care facilities, and other health care settings in correctional facilities, home-based health care, emergency medical services and laboratories handling *M. tuberculosis* specimens "Environmental controls": includes not only engineering controls but also other aspects of the environment, such as building design "Airborne infection isolation room" "Tuberculin skin test" (TST)
Respiratory Hygiene, Cough Etiquette	Not included	Included
Risk Assessment	Four categories: minimal, very low, low, intermediate and high	Three categories: low, medium, potential ongoing transmission
Diagnostic Methods	TST	TST or interferon gamma release assay
Frequently Asked Questions	Not addressed	Included

* Source: Centers for Disease Control and Prevention† and Jensen and colleagues.

Transmission of *Mycobacterium tuberculosis*

- Spread by droplet nuclei (airborne)
- Highly contagious
- Immune system usually prevents spread (10% infected develop TB)
- Bacteria can remain alive in the lungs for many years (latent TB infection)

Risk of TB Transmission in Dentistry

- Risk in dental settings is low
- Only one documented case of transmission
- Tuberculin skin test conversions among DHP are rare
- New case report of transmission in dental setting??

Preventing Transmission of TB in Dental Settings

- Assess patients for history of TB
- Defer elective dental treatment
- If patient must be treated:
  - DHCP should wear N-95 face mask
  - Separate patient from others/mask/tissue
  - Refer to facility with proper TB infection control precautions

Creutzfeldt-Jakob Disease (CJD)
and other Prion Diseases

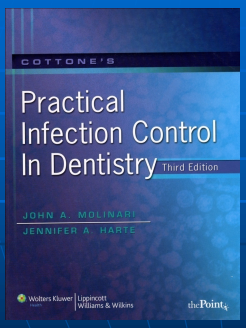
- A type of a fatal degenerative disease of central nervous system
- Caused by abnormal "prion" protein
- Human and animal forms
- Long incubation period
- One case per million population worldwide

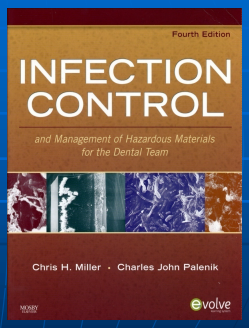
Program Evaluation

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

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

RESOURCES
IC BIBLES

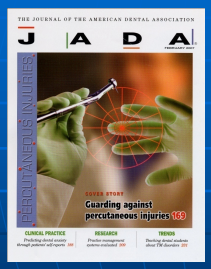




RESOURCES

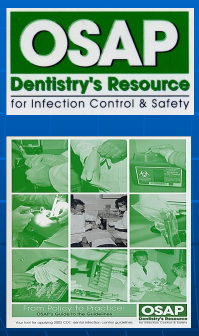
- www.cdc.gov
- www.apic.org
- www.osha.gov
- www.fda.gov
- www.dec.state.ny.us
- www.biofilmsonline.com

RESOURCES



- www.ada.org
- www.adacatalog.org
- www.aami.org
- www.nysdental.org

OSAP



- www.osap.org
- "From Policy to Practice-OSAP's Guide to the Guidelines", 2004

ULTIMATE GOAL of DENTAL INFECTION CONTROL

"……strengthen an already admirable record of safe dental practice"

-CDC 2003

- Remember, go to OSHA and CDC for more info, "googling":

HAZCOM

CDC Oral Health

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QUESTIONS