

1 **HOT TOPICS IN INFECTION CONTROL**

3 Hour CE

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2 **WHAT'S HOT?**

- Leadership – Who's in charge of safety?
- Resources & Updates
- Standard Precautions: (everyday, every patient)
- Infection Control Challenges – fixing your weakest links
-

3 **TOP 5 SAFETY GOALS**

- Have a plan
 - Written Safety Program
- Assign a person
 - Safety Manager
- Identify the enemy
 - Recognize & Understand Risks
- Keep everyone safe
 - Implement Standard Precautions
- Plan B
 - Plan for exceptions and accidents

4 **THE RULES**

- CDC Recommendations
 - Based on research
 - Set standards, not "laws"
- OSHA: Occupational Safety & Health Administration
 - Based on CDC recs
 - Worker safety
 - Rules are laws
- State Board laws
 - Include CDC & OSHA & ADA standards
- Civil & Health Dept.... Laws
- Competition, marketing, reputation

5 **UPDATE & EDIT YOUR IC PLAN**

- Injury & Illness Prevention Program
 - OSHA manual
- Standard Operating Procedures (SOP's) = written step-by-step plans
- Location? Training?
- Must be specific & accurate

- Surface disinfection
- Hand hygiene
- Instrument processing
- Dental waterlines

6 **MUST POST IN OFFICE:**

Appendix 3

Dental Board of California

Infection Control Regulations

California Code of Regulations Title 16 Section §1005
Minimum Standards for Infection Control

*All DHCP must comply & follow OSHA laws
(b) (1-3)*

7 **2016 CDC RECOMMENDATIONS**

<https://www.cdc.gov/OralHealth/infectioncontrol/guidelines/index.htm>

Checklists!

To be used along with 2003 Infection Control Recommendations

8 **CHAIN OF INFECTION**

9 **INFECTION TRANSMISSION ROUTES**

- Percutaneous exposure
 - Open tissue, lesions, injury, dental care (pt.)
- Mucosal, ocular tissue exposure
 - Absorption
 - Injury (fragile)
- Direct skin contact with source
- Indirect skin contact with contaminated item, surface
 - Instruments, counters, waste, lab case
- Ingestion
- Inhalation – aerosols, droplets

10 **STANDARD PRECAUTIONS MINIMUM STANDARDS FOR ALL PATIENTS**

- Hand hygiene
- PPE
- Respiratory hygiene / cough etiquette
- Sharps safety
- Safe injections
- Instrument, device sterilization
- Environmental asepsis cleaning, disinfection, barriers

Written protocol shall be developed, maintained, and periodically updated for proper instrument processing, operator cleanliness, and management of injuries.

11 **STANDARD PRECAUTIONS**

- Proven effective for controlling
 - Bloodborne diseases
 - Contact diseases
 - Droplet diseases
- Not effective for airborne diseases

12 **BLOODBORNE DISEASES
SYMPTOMATIC OR ASYMPTOMATIC**

- Acute:
 - Antibodies / drugs may resolve
- Chronic:
 - Antibodies = ineffective.
 - HBV: highly infective, → cirrhosis, liver failure, cancer, death. Vaccine & antiviral meds
 - HCV: less infective, often asymptomatic (20-30 years), undiagnosed → cirrhosis, liver failure, cancer, death. No vaccine, but antiviral meds,
 - HIV: variable infectivity, → CD4 cell destruction immunosuppression, cancer, death. No vaccine but antiretroviral meds (ART).

13 **MOST LIKELY DENTAL EXPOSURES**

- Percutaneous
 - Needles
 - Burs
 - Instruments, files
- Compromised skin
- Mucosal exposure
- HBV = efficiently transmitted directly & indirectly (survives on surfaces – 7 days)

14 **RISK OF INFECTION AFTER NEEDLESTICK**1 Source

HBV

HCV

HIV

2 Risk

6.0-30.0%

1.8%

0.3%

15 **HEPATITIS B**

- 1 1980 - 2013
- 2 Incidence declined since 1991
(infant vaccinations)
- 3 2015 CDC Report
- 4 • At least 21% increase in acute HBV cases
 - Due to injected drug use

- Grossly under-reported
-
- Chronic cases also under-reported
 - 850,000 – 2.2 mil cases???

16 **HBV BOOSTERS & TREATMENT**

Boosters?

- Vaccine gives immunologic memory \geq 23 years
 - No boosters formally recommended
- Boosters may be needed sooner for immunocompromised pts & hemodialysis pts.
- Get tested. Know your status!

Treatment:

- If exposed, TX = booster vaccine, maybe HBIG
- Vaccine MUST be offered, even to pre-vaccinated workers. Best within 24 hrs.)
- Antiviral drugs - IMPROVED

17 **HEPATITIS C (HCV)**

- Most common chronic bloodborne infection in U.S.
- 2.7 – 3.9 million Americans have chronic HCV
 - 4 X more than either HBV or HIV
- Most chronic HCV carriers are baby boomers
 - Born 1946 – 1964
 - ~75% = unaware of infection

18 **HEPATITIS C (HCV)**

- Some people clear infection
 - 85% develop chronic HCV
 - Can result in chronic liver disease, cirrhosis, liver cancer, death
 - Subclinical, asymptomatic 10 – 20 years
 - Some types of HCV can be cured
 - No vaccine
- HCV-related oral ulcerative lesions →

19 **TODAY'S TESTING REC'S**

- Test all high risk groups
- 1 time test for all baby boomers regardless of risk
 - 60% of DDS's = born 1945 – 1965
- New Rapid (40 min.) antibody tests
 - Venipuncture, finger-stick (less reliable)
 - OraQuick
 - Detect past or present HCV infection
 - Must be followed up with nucleic acid test (NAT) for viral RNA

20 **WHY SHOULD YOU GET TESTED FOR HEPATITIS C (HCV) ?**

- Antiviral drugs:
 - Eliminate virus or lower viral load

- May reduce complications & progression
- Some types of HCV can be cured

21 **INSECT-BORNE DISEASES**

- Malaria, Dengue, Zika, Yellow fever, Lyme, West Nile, chikungunya
- Primarily vector transmitted
- Treat as bloodborne disease

22 **HIV UPDATE**

- 34 years since CDC first identified HIV
- NO cases of patient to dental worker HIV transmission
- No vaccine, but vital antiretroviral meds cut transmission to partners by 96% (lower viral load)
- 20% of infected = unaware of status
- Early TX saves lives!
- Education is the key!
-
-

23 **HIV / AIDS - CURRENT STRATEGIES**

- Rapid HIV type 1 + 2 Test: OraQuick:
 - Mouth swab or blood test
 - 99% accurate, 1 min. result
 - For source person testing or gen. Screening
 - Pre-arrange with Occupational Health M. D.

24 **SAFE RE-CAPPING**

- Only recap needles using:
 - Scoop technique
 - Mechanical devices

25 **SHARPS & WASTE**

- Follow OSHA rules
- Dispose of all sharp items in puncture resistant containers
- Dispose of pharmaceutical waste as per EPA
- Dispose of contaminated solid waste as per EPA

26 **POST EXPOSURE PROPHYLAXIS**

- Exposure packet
 - Phone numbers, forms, driving directions, payment arrangements
- Direct MD re: testing, disclosure, include HCV!
- Rapid HIV, HCV testing

- Response windows for maximum effect:
 - HIV - ART – 2 hours
 - HBV – 24 hours
 - HCV – 24 hours
- PEP follow-up: after exposure test 3-6 weeks, 3-6 months, 9 months
- Counseling
 -
 -

27 **ARE YOU SET UP?**

- National Clinicians' PEP Hotline
- 1-888-448-4911
- Call 24/7

28 **WHAT'S YOUR WEAKEST LINK?**

29 **HAND HYGIENE**

- Hand hygiene is the single most important factor in transmission of disease
- 88% of dis. Trans. Is by hand contact
- 'Resident' skin flora is permanent (IN skin)
- 'Transient' flora is temporary (ON skin)

30 **FIRST WASH OF THE DAY**

- Start with clean hands
- Subsequent hand hygiene will be more effective

31 **HOW LONG SHOULD YOU LATHER FOR FIRST & LAST WASH OF THE DAY?**

- A. 20 seconds
- B. 40 seconds
- C. 5 minutes
- D. 1-2 minutes

32 **HOW LONG SHOULD YOU LATHER WHILE WASHING REPEATEDLY DURING DAY?**

- A. 1 minute
- B. 15 seconds
- C. 20 seconds
- D. 30 seconds

33 **MOST RECOMMENDED:
COMBINED PROTOCOL**

- 1 Plain soap – routine handwashing
- 3 Antimicrobial / alcohol hand rub on unsoiled hands

34 **HOW LONG SHOULD THE ALCOHOL SANITIZER STAY WET ON YOUR HANDS?**

- 2 5 seconds
- 8 seconds

15 seconds

20 seconds

35 **IS WATERLESS HAND-RUB EFFECTIVE?**

- Should have ethanol, not isopropyl alcohol
 - Less drying to skin
 - More effective vs. Viruses
- Must have enough emollients for heavy clinical use
- FDA cleared for medical use
 - "Safe and effective"
- Contact time: 15 sec.

36 **IF YOU DON'T USE ALCOHOL SANITIZER**

- 1 Plain soap – routine handwashing
- 2 Antimicrobial soap periodically

37 **COMMON MISTAKES
(THAT HARBOR ORGANISMS &
MAY DAMAGE GLOVES)**

- False nails, Nail polish & applications
- Un-manicured nails
- Jewelry
- Petroleum-based products
- Bar soap

38 **HAND ASEPSIS: DID YOU KNOW...**

- Inflamed, irritated skin retains more bacteria, (handwashing = less effective)

39 **SKIN EXPOSURES**

- Non-intact skin may allow pathogens, irritants, allergens to enter
- Existing cuts / openings
- Dry, cracked skin

40 **DERMATITIS VS. ALLERGIES**

- 30% of HCW's suffer
- Mostly irritant contact dermatitis
- Caused by
 - Detergents & water
 - Occlusive gloves (proteins, chemicals)
- Allergies are rare
-

41 **CONFUSING SYMPTOMS**

- Rash, welts,
- Urticaria (hives)
- Angioedema
- Puritis

-
-
-

42 **GET A DIAGNOSIS!**43 **TATTOO, PIERCING RISKS**

- Unhealed tattoo, piercing = portal of transmission / exposure
- Patient and employee awareness / protection
- Written protocol

44

Broken skin management:

- Protect skin openings
- Finger cots, double glove
- Change dressings often.
- Illegal to treat patients with infection or weeping dermatitis

45 **WHAT'S YOUR WEAKEST LINK?**46 **SHE RUBBED HER EYE**

- Ocular herpes is usually unilateral
- May migrate up nerve from oral infection.
- Recurs, leading to blindness
- 90% of U.S. adults carry herpes
- Neonates contract type 2 at birth

47 **WEAR MASK UNDER FACE SHIELD FOR LAB WORK & PATIENT CARE**48 **WHAT DO YOU NEED TO KNOW ABOUT EYEWASH STATIONS?**

- Location: within 15' or 10 seconds
- No hot water (tepid!)
- Must deliver ≥ 1.5 L/minute for 15 minutes, single-action & hands-free
- How to activate
- Eyewashes are flushed weekly
- When to use and when NOT to use eyewash stations
-

49 **WHAT'S YOUR WEAKEST LINK?**50 **GLOVES**

- How do they fit?
- Are you allergic or sensitive?
 - Latex?
 - Accelerators?
 - Thiuram
 - Carbamate
- Do you trust your gloves?

- 4% may leak
 - Buy quality
-

51 **HOW LONG DO GLOVES LAST?**

- 2
- No exact data
 - Change per patient & when compromised
 - No longer than 1 hour
 -

52 **RESPECT GLOVE LIMITS
WHAT DESTROYS GLOVES?**

- Soap
- Water
- Oils – all types
 - Petroleum
 - Emollients in products
 - Make-up
- Sweat, dental materials
- Stretching, donning, removing
- Use!!!-

CDC MMWR 2003

53 **2016 FDA BAN ON POWDERED GLOVES**

- Rule applies to:
 - All glove types
 - Exam & surgical gloves
 - Absorbable powder for lubricating surgical gloves
- Powder risks:
 - Increased aerosolized allergens (with latex gloves)
 - Severe airway inflammation
 - Surgical & wound inflammation & post-surgical adhesions

54 **DONNING & REMOVAL
TECHNIQUE & SEQUENCE
DON IMMEDIATELY B4 USE
REMOVE IMMEDIATELY AFTER**

55 **WHAT'S YOUR WEAKEST LINK?**

56 **AEROSOL-TRANSMITTED-DISEASES (ATD)**

- Inhalation of suspended particles
- Small fluid droplets dry in nano-seconds, float
- Particles remain indefinitely
- Require special building design & PPE for safety
- ATD patients must be screened and referred

57 **AIRBORNE DISEASES**

- Measles, mumps
- Varicella (including disseminated zoster) Tuberculosis , Flu, SARS, Pertussis
-

58 **SCREENING FOR ACTIVE CASES
LOOK FOR SYMPTOMS**

- Goals = reduce transmission by:
 - Early detection @ check-in
 - Prompt isolation
 - Implement respiratory hygiene / cough etiquette
 - Defer elective TX
 - Refer emergency / acute cases
 - For dental emergencies
 - For medical care
 - Implement appropriate precautions
 -
 - Cal OSHA Title 8, Ch 4
 - Section 5199 Aerosol Transmissible Diseases.
 - California-only regulation.

59 **INFLUENZA SIGNS & SYMPTOMS**

- Fever & chills – sudden onset (102 – 106 degrees)
- Cough (loose, then dry)
- Breathing difficulty
- Sore throat
- Intense body aches, skin sensitivity
- Headache, sinus / nasal pain
- Diarrhea, vomiting

60

61 **MEASLES – STILL KILLING KIDS**

- Leading cause of death in children (worldwide)
- 10-12 day incubation
- High fever (1 wk), runny nose, cough, white spots in mouth: precede rash

62 **VIOLENT “PAROXYSMS”**

- Uncontrollable “100 day cough”
- Breaks ribs, causes vomiting, urination....
- Etiology: bacterium *Bordetella pertussis*
- Strips cilia, mucus stagnates, airways = raw, sensitive to touch, air, water...
- Confused with cold, symptoms build
- light fever

63 **SCARLET FEVER (SCARLATINA)**

- Caused by Gp A Streptococcus pyogenes (strep throat)

- Mostly children 5 – 15
- Antibiotics
- Untreated: may cause serious illness, rheumatic fever, kidney damage
- # of cases & deaths decreased since early 1900's
- Recent increase in cases. Cause unknown
- East Asia, England - @ 50 year high
- Droplet & contact transmission

64 **SCARLET FEVER**

- Red rash: looks like sunburn, feels like sandpaper
 - Begins on face, neck, spreads everywhere
 - Redness blanches
 - Later skin peels

65 **SCARLET FEVER**

- Red lines at skin folds
-

66 **SCARLET FEVER**

- Flushed face, pale ring around mouth

67 **SCARLET FEVER**

Strawberry tongue or coated

68 **SCARLET FEVER**

- Fever \geq 101 degrees
- Lymphadenopathy
- Difficulty swallowing
- Nausea, vomiting
- Headache

69 **MAKE SURE YOU ARE PROTECTED!**

- 1 • HBV
 - Influenza
 - Measles
 - Mumps
 - Rubella
 - Varicella-Zoster
 - Pertussis
 -
 - www.CDC.gov: new adult vaccine recs
 - OSHA policies:
 - New hires & employees
 -
- 2 • Tetanus
 - Polio
 - Pneumonia

- Meningitis
- HPV

70 **TUBERCULOSIS POLICY**

- MDR TB = worldwide risk
- Develop TB program appropriate to risk
- Tuberculin skin test (TST) when hired & per risk
- Ask all pts:
 - History of TB?
 - Symptoms of TB?

71 **SCREEN FOR ACTIVE TB:**

- Productive cough (> 3 weeks)
 - Bloody sputum
- Night sweats
- Fatigue
- Malaise
- Fever
- Unexplained weight loss
- If yes: medical referral, (reportable)

72 **MYCOBACTERIUM TUBERCULOSIS**

- Mtb infection is NOT synonymous with ACTIVE TB!
- Positive skin test does NOT mean ACTIVE TB!

73 **HAVE YOU BEEN VACCINATED AGAINST TB?:**

- TB blood tests (interferon-gamma release assays or IGRAs), unlike the TB skin test are not affected by prior BCG vaccination
- Symptom tests
- ATD screening form
- Chest X-ray?

74 **TB, FLU & OTHER ATD'S**
ASK: DO YOU HAVE....

- 1
- TB
 - Fever, cough....
 - Flu
 - Fever?
 - Body aches?
 - Runny nose?
 - Sore throat?
 - Headache?
 - Nausea?
 - Vomiting or diarrhea?

•

If yes, re-appoint, refer

-
- 2 • Pertussis, measles, mumps, rubella, chicken pox, meningitis
 - Fever, respiratory symptoms +
 - Severe coughing spasms
 - Painful, swollen glands
 - Skin rash, blisters
 - Stiff neck, mental changes
- 75 **CHRONIC RESPIRATORY DISEASES
(NOT ATD'S, NO FEVER)**
 - Asthma
 - Allergies
 - Chronic upper airway cough syndrome "postnasal drip"
 - Gastroesophageal reflux disease (GERD)
 - Chronic obstructive pulmonary disease (COPD)
 - Emphysema
 - Bronchitis
 - Dry cough from ACE inhibitors
- 76 **COVER YOUR COUGH SUPPLIES**
- 77 **RESPIRATORY HYGIENE, COUGH ETIQUETTE
POST SIGNS**
 - Cover your cough (lists symptoms patients should report to staff)
 - <http://www.cdc.gov/ncidod/dhqp/pdf/Infdis/RespiratoryPoster.pdf>
 - Cover your cough instructions and fliers in several languages
 - <http://www.cdc.gov/flu/protect/covercough.htm>
- 78 **DENTAL WORKER HEALTH**
 - Symptomatic workers must be evaluated promptly
 - No work until:
 - MD rules out ATD or
 - Worker is on therapy & is noninfectious
- 79 **WHAT'S YOUR WEAKEST LINK?**
- 80 **PPE: SURGICAL MASKS**
 - Masks are bi-directional barriers
 - You & patients depend on them for:
 - Coverage (mouth & nose)
 - Filtration (particles, germs)
 - Fluid protection
 -
- 81 **MASKS "SINGLE-USE, DISPOSABLE"
CHANGE BETWEEN PATIENTS OR SOONER**
- 82 **IDENTIFY THE MASK YOU USE**
 - ASTM level 1

- ASTM level 2
- ASTM level 3
- Don't know

83 **ASTM LEVELS**84 **KNOW MASK LIMITS**

- Mask degrades from;
 - Perspiration
 - Talking
 - Sneezing
 - Length of time mask is worn
 - Dust, spray
- Shield may lengthen use-life
- Position mask to "stand out" from face
- 20 min - 1 hour!
-

85 **LASER RESPIRATORY PROTECTION**

- N95 / N100 respirators
- Or: full face shield & level 3 mask
- Facial fit = vital
- Fluid resistance
- Suction / filtration placed 1" from site
- Eye protection

86 **WHAT'S YOUR WEAKEST LINK?**87 **SIMPLIFY SURFACES**

Environmental disinfection = cardinal feature in dentistry

88 **BARRIERS PREVENT CONTAMINATION OF HARD-TO-CLEAN SURFACES**89 **USE FDA CLEARED MEDICAL GRADE BARRIERS
(TESTED FOR VIRAL & BACTERIAL PENETRATION)**90 **DISINFECT WHEN CHANGE BARRIERS?**91 **INTERMEDIATE LEVEL DISINFECTANTS KILL ALL BELOW:**

- Mycobacteria - *Mycobacterium tuberculosis*
 - Nonlipid or small viruses (Non enveloped) - *Polio virus, enteroviruses*
 - Fungi - *Trichophyton spp.*
- (Low level hospital disinfectants kill only):
- Vegetative bacteria - *Pseudomonas aeruginosa, Staphylococcus aureus*
 - Lipid (enveloped) or medium-sized viruses - *Herpes simplex virus, hepatitis A, B & C virus, HIV, Ebola* (CDC)

§1005 (b) (14)

92 **FOLLOW LABEL DIRECTIONS**

- Clean before disinfecting
- Proteins neutralize disinfectants
- Wear Utility gloves

93 **ARE YOU CLEANING BEFORE DISINFECTING???**

It depends on technique
And product selection

94 **EFFECTS OF ALCOHOL CONCENTRATION**

95 **CLEAN BEFORE DISINFECTING**

96 **LEAVE FOR STATED TIME**

- Factors:
 - Wipe material
 - Wipe saturation
 - Alcohol content

97 **DENTAL LAB ASEPSIS**

- Splash shields
- Fresh pumice
- Sterilized / new rag-wheels for EACH pt.
- Sterilize / discard equipment used on contaminated dental devices
- Clean & disinfect lab cases with intermediate-level disinfectant & rinse B4 placement in pt.

98 **WHAT'S YOUR WEAKEST LINK?**

99 **SMARTER INSTRUMENT PROCESSING**

100 **INSTRUMENT PROCESSING:
HIGHEST LEVEL OF ASEPSIS**

101 **CASSETTES, TUBS, TRAYS WITH LIDS**

102 **PRE-CLEANING / HOLDING:
ENZYME PREVENTS DEBRIS ADHERENCE – AVOID SCRUBBING**

103 **ULTRASONIC CLEANING
ALLOW BUBBLES TO WORK**

104 **INSTRUMENT WASHERS**

-
- More efficient:
 - Space management
 - Instrument cleaning
 - Instrument management
-
-

105 **COMMON CLEANING ERRORS**

- 1 Ultrasonic

- 2 • Insufficient time
 - Detergent concentration
 - Ineffective cavitation
 - Inappropriate temperature
 - Overloading

3 Washer-Disinfector

- 4 • Wrong cycle ("rinse-hold")
 - Inadequate water spray: spray impingement
 - Clogged spray arms
 - Pump/line clog or malfunction
 - Overloading

106 **ONLY SCRUB IF DEBRIS REMAINS AFTER CLEANING....**

107 **WASH-CHECK MONITORS HELP VISUALIZE SOIL REMOVAL**

NON-TOXIC SYNTHETIC BLOOD/DEBRIS

HOLDER ↓

108 **IF YOU DON'T CLEAN IT**

- You can't disinfect it
- You can't sterilize it

109 **DENTAL ADVISOR STUDY**

J. A. MOLINARI, P. NELSON (DENTAL ADVISOR, 2012)

- ~10% of used & sterilized metal tips showed microbial contamination
- Visual debris was found

110 **CDC & CAL. REG.**

- Must heat sterilize ALL removable handpieces, even slow speeds
 - *electric handpieces: housing / sleeves = sterilizable, but micromotors may not be!
- §1005 (b) (15)
-

111 **PAPER UP? OR, PAPER DOWN?**

112 **WET WRAPS WICK & TEAR**

113 **CASSETTES MUST BE WRAPPED UNLESS USED IMMEDIATELY**

114 **STERILIZER MONITORING**

- Old: Indicators: per package
 - Heat
- New: Class 5 indicators: per load / package
 - Time, temperature, pressure
- Biological Monitors: weekly
 - Non - pathogenic spores
- Keep logs & written reports

115 **ARE YOU LABELING STERILIZATION PACKAGES?**

- A. Yes
- B. No
- C. Only surgical packages
- D. Only implantable devices
- E.

* Sharpee industrial permanent markers withstand 500 degrees

116 **WHY LABEL PACKAGES?**

- A. To re-sterilize after 3 months
- B. To identify date of sterilization in case of (+) growth spore test
- C. To identify person sterilizing items

117 **2 STERILIZATION LOGS**

- 1: Log of each cycle for each sterilizer
 - Class 5 Indicator strip results
 - Sterilizer
 - Date
 - Indicator pass/fail
 - Initial
 - Machine print-out
 -
- 2: Biological test results

118 **WHAT'S YOUR WEAKEST LINK?**119 **LEGIONELLA PROTECTED INSIDE ACANTHAMOEBA:
TWO FORMS**120 **DUWL – RELATED DEATH (2011)
LANCET**

- 82-yr old Italian Woman
- Legionnaires' dis (*L. pneumophila*)
- Proven from dentist's waterlines
- No other exposures
-

121 **2015 MYCOBACTERIUM ABSCESSUS
INFECTIONS - GEORGIA**

- 9 pediatric infections confirmed after pulpotomies
- All pts were immunocompetent
- No deaths; hospitalizations, IV antibiotics, surgeries
- Dept. of Health notified Atlanta Dentists:
 - Follow DUWL disinfection protocol
 - Meet DUWL potable & surgical standards
 - Monitor DUWL
 - Promptly report suspected outbreaks

122 **2016 MYCOBACTERIUM ABSCESSUS
INFECTIONS - CALIFORNIA**

- 57 pediatric infections confirmed after pulpotomies, children hospitalized
 - Symptoms start 15 – 85 days after TX.
 - TX = long term hospitalization, IV antibiotics
 - >500 patients notified
 - May – Sept, 2016, Children’s Dental Clinic, OC
- *M. abscessus* = waterborne
- Health Dept. ordered office to cease use of & replace on-site water system
- Office closed, opened, problem returned – closed again
-

123 **2016 MYCOBACTERIUM ABSCESSUS
INFECTIONS - CALIFORNIA**

- Pulpotomies must include pulp area “sterilization”
- Potable/or sterile standard
- Structural, plumbing, equipment, antimicrobial & protocol revisions required. Must maintain @ 500 CFU/mL (CDB, CDA, CDC)
- All DUWL should be tested to validate
 - www.ochealthinfo.com/dentaloutbreak
-

124 **2 STANDARDS FOR WATER SAFETY**

- Sterile - for surgery, (cutting bone, normally sterile tissue)
 - 0 CFU/mL of heterotrophic water bacteria
 - CDC special update, OSAP, Dental Board law
- Potable - for non- surgical procedures -
 - 500 CFU/mL of heterotrophic water bacteria (meets EPA safe drinking water standards)
 - CDC, OSAP, EPA, Dental Board

125 **2 STANDARDS
FOR DENTAL TREATMENT WATER**

- Surgical Standard: USP sterile water & sterile delivery system
 - Bulb or other syringe
 - Peristaltic pump, sterile lines
 - Aqua-Sept
- Non-surgical dentistry: Potable (500 CFU/mL)
 - Chemical treatment
 - Reservoirs
 - Cartridges
-

126 **WHEN DOING SURGICAL PROCEDURES, DO YOU USE**

Sterile water & sterile separate delivery device?

127 **FOR POTABLE WATER**

YOUR OFFICE SHOULD:

- A. Flush lines in AM for 2 min./line (handpieces off)
- B. Flush lines between patients for 20 sec.
- C. Shock/Purge lines @ 1 – 2 months if using disinfecting product in dental water
- D.
- D. Shock/Purge lines weekly if using only water in bottles.
- E. Follow Manufacturer's directions (dental unit & DUW product)
- F.

128 **SIMPLE FLUSHING OF WATERLINES**

* Flushing is important: flushing removes planktonic contaminants
 BUT: flushing alone is NOT a reliable way to control DUWL biofilms.

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129 **WATERLINE TREATMENT OPTIONS**

- Chemical "Shock" - removes biofilm
 - Sterilex, bleach
 - Caustic, may injure tissue. Rinse !
- Continuous chemical "maintenance" - prevents biofilm, keeps CFU's low.
 - DentaPure 1 /year (dry bottle at night)
 - BluTab (Silver ions) – ProEdge (keep bottle on)
 - ICX (Silver ions) – Adec
 - Team Vista - HuFriedy

130 **HOW DO YOU KNOW YOUR WATERLINES ARE SAFE?**

- Loma Linda University Waterline Testing
- ProEdge Waterline Testing

131 **USE ASEPTIC TECHNIQUE TO DRAW SAMPLES**132 **IN-OFFICE TESTING**

HPC sampler Aquasafe™

133 **TREAT, SHOCK, AND TEST ALL WATERLINES**134 **TOP (GENERAL) SAFETY GOALS**

- Written Safety Program
- Safety Manager
- Recognize & Understand Risks
- Implement Standard Precautions
- Plan for exceptions and accidents
-

135 **TOP 12 SAFETY GOALS**

1. Written Safety Program
 - OSHA manual – personalize & update it
 - Enforce it
 - IC laws
 - Download CDC recommendations!

- Instructions for use, operation manuals....
- 2. Safety Manager
- 3. Recognize & Understand Risks

136 **TOP 12 SAFETY GOALS**

- 4. Hand Hygiene
 - Calibrate staff
 - Technique
 - Hand care rules
 - Supplies & set-up
 - Products
 - Facility
- 5. Surface asepsis
 - Follow directions
 - Clean & disinfect
 - Barriers

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137 **TOP 12 SAFETY GOAL**

- 6. PPE – Use correctly & respect their limits
 - Gloves
 - Select for fit, reliability
 - Change 20 min – 1 hr.
 - Masks
 - Select appropriate ASTM levels
 - Avoid cross-contamination
 - Change 20 min – 1 hr.

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138 **TOP 12 SAFETY GOALS**

- 7. Vaccines
 - Educate staff (CDC.gov)
- 8. Sharps safety
 - Handling & waste
- 9. Instrument sterilization
 - Organize sterilization pathway
 - Instrument cassettes
 - Instrument washer
 - Monitor cleaning
 - Use class 5 indicators
 - Keep logs

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139 **TOP 12 SAFETY GOALS**

10. Dental waterline management
- Insure sterile water for surgeries
 - Insure potable standard for non-surgeries
 - Control waterline contamination
 - Monitor waterline safety
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140 **TOP 12 SAFETY GOALS**

11. Screen patients for active ATD's
- Take temperatures
 - Know symptoms
 - Notify patients & staff about ATD policy
 - TB policy: test staff
 - Respiratory hygiene, cough etiquette
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141 **TOP 12 SAFETY GOALS**

12. PEP "Plan B"
- Exposure incident package
 - Records
 - Follow-up
 - Stay alert for extraordinary cases
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142 **TEAMWORK!**143 **HOT TOPICS IN
INFECTION CONTROL**

3 Hour CE
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