

## 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  $\geq 1.5$  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](http://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
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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](http://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
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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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