1 **OSHA & INFECTION CONTROL UPDATE**

4 Hours CE

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2 **LOOK BACK – LAST YEAR**

DID YOU……

- Have accidents or exposures?
- Start using any new technology?
- Have any staff changes?
- Move or remodel the office?
- Update your safety policies?
-

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 **2016 CDC RECOMMENDATIONS**

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

Checklists!

To be used along with 2003 Infection Control Recommendations

7 **NEW OSHA CHEMICAL CLASSIFICATIONS**
WWW.OSHA.GOV

- A: Health risks
- B: Chemical risks
- MSDS = SDS, now 16 sections, in specific format
- New labels: must have:
  - Name of product
  - Single word (warning or danger)
  - Statement of hazard

8 **UN'S GLOBALLY HARMONIZED SYSTEM**
HAZARD WARNING PICTOGRAMS

9 **2 TOP SAFETY GOALS**

- Written Safety Program
  - OSHA manual – personalize & update it
  - Enforce it
  - California IC laws
  - CDC recommendations
  - Instructions for use, operation manuals….
- Safety Manager
  - Qualified, trained, empowered, recognized leader
-

10 **CHAIN**
OF
INFECTION

11 **BREAKING**
THE CHAIN

12 **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

13 **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

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

14 **STANDARD PRECAUTIONS**

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

15 **BLOODBORNE DISEASES**

- Acute:
  - Symptomatic / asymptomatic
- 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).

16 **MOST LIKELY DENTAL EXPOSURES**

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

17 **RISK OF INFECTION AFTER NEEDLESTICK**

1 Source

HBV .....

HCV .....

HIV .....

2 Risk

6.0-30.0%

1.8%

0.3%

18 **VIRAL HEPATITIS**

- Infection with ≥ viruses that attack liver
- Most common in U.S.: Hepatitis A, B, C
- Hepatitis A
  - Fecal – oral: spread by food & water contaminated with feces
  - Lasts weeks to months, not chronic
  - Usually resolves spontaneously
  - Vaccine is available
- Other types: hepatitis D, E, G, & Transfusion Transmitted Virus (TTV)

19 **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???

20 **HBV BOOSTERS & TREATMENT**

Boosters?

- Vaccine gives immunologic memory ≥ 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

21 **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

22 **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 →

23 **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

24 **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

25 **INSECT-BORNE DISEASES**

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

26 **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%
- 20% of infected = unaware of status
- Early TX saves lives!
- Education is the key!
-
-

27 **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.

28 ☐ **SAFE INJECTIONS**

29 ☐ **SAFE RE-CAPPING**

- Only recap needles using:
  - Scoop technique or:
  - Mechanical devices designed to
    - hold needle sheath
    - eliminate need for 2 handed capping
- §1005 (b) (9)
-

30 ☐ **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

31 ☐ **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
  -
-

32 ☐ **ARE YOU SET UP?**

33 ☐ **4 SAFETY GOALS**

- Recognize & Understand Risks
- Vaccines
  - Educate staff (CDC.gov)
- Sharps safety
  - Handling & waste
- PEP
  - Exposure incident package
  - Records
  - Follow-up
-

34 **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)

35 **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

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

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

37 **SOAP DISPENSER CONTAMINATION**

- Microbial contamination of soap linked to infections & outbreaks in hospitals
- 25% of refillable containers had bacteria
- 16% had coliforms
- Some bacteria remains on hands after washing
- No bacteria found in sealed (1 use) dispensers

38 **MOST RECOMMENDED: COMBINED PROTOCOL**

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

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

2 5 seconds
8 seconds
15 seconds
20 seconds

40 **WATERLESS HAND-RUB SAFETY**

- 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"

41 **HAND ASEPSIS: DID YOU KNOW…**

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

42 **1 SAFETY GOAL**

- Hand Hygiene
  - Calibrate staff: hand hygiene protocol
    - Technique
    - Hand care rules
      - Fingernails
      - Jewelry
  - Supplies & set-up
    - Products
    - Facility
  -
  -

43 **SKIN EXPOSURES**

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

44 **HYPERSENSITIVITY / ALLERGY**

- Exaggerated immune response to an "enemy"
- Results in tissue destruction
- 4 types

45 **DERMATITIS VS. ALLERGIES**

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

46 **CONFUSING SYMPTOMS**

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

47 **GET A DIAGNOSIS!**

48 **HAND HYGIENE**

- Why do we wash / sanitize every glove change?

- Gloves fail
- Organisms grow under gloves, doubling every 12 min.

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

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

50 **MRSA**
MULTI-DRUG RESISTANT STAPH. AUREUS

- Staph = common in flora of skin, nose, throat
- MRSA colonizes 1/3 of pop.
  - 64% more likely to die than non-colonized
  - Usually non or mildly infective
  - Unless enters bloodstream
  -
-

51 **RESISTANT SKIN INFECTIONS….**
WHAT SHOULD YOU LOOK FOR?

52 **MRSA ENTERS OPEN SKIN.**
PIMPLES, BOILS, LESIONS; MAY LEAD TO PNEUMONIA, SEVERE SKIN, BONE, BLOODSTREAM INFECTIONS, SEPTIC ARTHRITIS, ENDOCARDITIS, DEEP ABSCESSES, TOXIC SHOCK

53 **MRSA DEFEATS HOST DEFENSES**

Get a lab diagnosis early

54 **TATTOO, PIERCING RISKS**

- Skin not cleaned
- Needle not clean / sterile
- Ink "double-dipped"
- Unhealed tattoo, piercing = portal of transmission / exposure

55

Protect skin openings
Watch for symptoms
Clean environmental surfaces

56 **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

57 **OCULAR HERPES**

58 **WHAT DO YOU NEED TO KNOW ABOUT EYEWASH STATIONS?**

- Location: within 15′ or 10 seconds
- No hot water
- How to activate
- Eyewashes are flushed weekly
- When to use and when NOT to use eyewash stations
-

59 **COMPUTER VISION SYNDROME**

- 70% of adults suffer digital eye strain
- Artificial blue light increases cataracts & macular degeneration
- Gunnar lenses filter blue light
- Crystalline: 10%
- Amber: 65%
- Outdoor: UVA, UVB

60 **GLOVES**

- How do they fit?
- Are you allergic or sensitive?
  - Latex?
  - Accelerators?
    - Thiuram
    - Carbamate
- Do you trust your gloves?
- 4% may leak
  - Buy quality
-

61 **HOW LONG DO GLOVES LAST?**

2

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

62 **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

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

64 **WHAT KILLS GLOVES?**

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

CDC MMWR 2003

65 **1 SAFETY GOAL**

- PPE: Gloves
  - Select for fit, reliability
  - Consider allergies
  - Know limits!
  -
  -

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

3
- 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

67 **AIRBORNE <u>DISEASES</u>**

- Measles, mumps
- Varicella (including disseminated zoster) ¥
- Tuberculosis ¥£ , Flu
-
-
-
-
-
-

¥ requires >1 precaution £ See CDC TB Guidelines

68 **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

69 **TODAY'S H3N2 INFLUENZA EPIDEMIC**

- Flu season = usually Oct. to May (early peak?)
- 42 deaths this season
- Children, elderly & pregnant women = highest risk
- Healthy getting seriously ill
- LLU seeing 60 more pts. / day than usual
- H3N2 = most virulent, other strains also seen
-

70 **LOMA LINDA UNIVERSITY FLU TENTS**

- Hospitals overflowing, setting up tents
- Canceling surgeries to handle crisis
- Flu vaccine ~ 30% effective, but it helps!

71 **FIND THE 1 INCORRECT SIGN OF INFLUENZA**

A. Abrupt onset
B. Extreme fatigue
C. Body aches
D. Subnormal temp.
E. Fever

72 **INFLUENZA SIGNS & SYMPTOMS**

- Fever & chills – sudden onset
- Cough
- Sore throat
- Intense body aches, skin sensitivity
- Headache
- Diarrhea, vomiting

73

74 **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

75 **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

76 **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

77 **SCARLET FEVER**

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

78 **SCARLET FEVER**

- Red lines at skin folds
-

79 **SCARLET FEVER**

- Flushed face, pale ring around mouth

80 **SCARLET FEVER**

Strawberry tongue or coated

81 **SCARLET FEVER**

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

82 **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

83 **SEATING**
- Automatic seat tilt:
  - Better circulation to legs
  - < back strain
  - Get close to patient
- Back support
  - Up & down
  - In & out
  - < back strain
  - Better posture
- 5 Casters
  -

84 **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?

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

86 ***MYCOBACTERIUM TUBERCULOSIS***
- Mtb infection is NOT synonymous with ACTIVE TB!
- Positive skin test does NOT mean ACTIVE TB!

87

88 **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?

89 **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

90 **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

91 **COVER YOUR COUGH SUPPLIES**

92 **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

93 **DENTAL WORKER HEALTH**

- Symptomatic workers must be evaluated promptly
- No work until:
  - MD rules out ATD or
  - Worker is on therapy & is noninfectious

94 **5 SAFETY GOALS**

- Screen patients for active ATD's
  - Take temperatures
  - Know symptoms
- Notify patients & staff about ATD policy
- TB policy: test staff
- Respiratory hygiene, cough etiquette
- Vaccines

95 **PPE: SURGICAL MASKS**

- Designed to protect patient from:
  - Oral, nasal, respiratory tract flora
  - (Breathing, speaking 1-3 cfu / min)
- Masks are bi-directional barriers

96 **MASKS "SINGLE-USE, DISPOSABLE"**
CHANGE BETWEEN PATIENTS OR SOONER §1005 (B) (4)

97 **FILTRATION**

98 **IDENTIFY THE MASK YOU USE**

- ASTM level 1
- ASTM level 2
- ASTM level 3
- Don't know

99 **ASTM LEVELS**

100 **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!
-

101 ☐ **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

102 ☐ **CLINIC ATTIRE**

- Protective attire
- Comply with Cal/OSHA regs
-

103 ☐ **2 SAFETY GOALS**

- PPE: Masks
  - Select appropriate ASTM levels
  - Use correctly
  - Avoid cross-contamination
  - Know limits!
- PPE = outer garment
- Cal/OSHA rules
  -
  -

104 ☐ **COVER OR REMOVE EXTRA ITEMS**

105 ☐ **SIMPLIFY SURFACES**

Environmental disinfection = cardinal feature in dentistry

106 ☐ **LOAD TRAYS OUTSIDE OPERATORY**

107 ☐ **WHAT IS YOUR PROTOCOL FOR RETRIEVING ITEMS DURING PROCEDURES?**

108 ☐ **BARRIERS PREVENT CONTAMINATION OF HARD-TO-CLEAN SURFACES**

109 ☐ **USE FDA CLEARED MEDICAL GRADE BARRIERS (TESTED FOR VIRAL & BACTERIAL PENETRATION)**

110 ☐ **DISINFECT WHEN CHANGE BARRIERS?**

111 ☐ **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)

112 ☐ **FOLLOW LABEL DIRECTIONS**

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

113 ☐ **ARE YOU CLEANING BEFORE DISINFECTING???**

It depends on technique
And product selection

114 ☐ **EFFECTS OF ALCOHOL CONCENTRATION**

115 ☐ **WHAT IS THE ACTIVE INGREDIENT?**
WHICH PRODUCTS CLEAN?

116 ☐ **CLEAN BEFORE DISINFECTING**

117 ☐ **LEAVE FOR STATED TIME**

118 ☐ **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.

119 ☐ **1 SAFETY GOAL**

- Surface asepsis
  - Select product
  - Follow directions
  - Clean & disinfect
  - Barriers
  -
  -

120 ☐ **INSTRUMENT PROCESSING:**
HIGHEST LEVEL OF ASEPSIS

121 ☐ **INSTRUMENT PROCESSING**
"TRAFFIC FLOW"

122 ☐ **SAFE TRANSPORT?**

123 ☐ **CASSETTES, TUBS, TRAYS WITH LIDS**

124 ☐ **PRE-CLEANING / HOLDING**

125 ☐ **ENZYME PREVENTS DEBRIS ADHERENCE**

126 **ULTRASONIC CLEANING**
ALLOW BUBBLES TO WORK

127

128 **INSTRUMENT WASHERS**

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

129 **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

130 **ONLY SCRUB IF DEBRIS REMAINS AFTER CLEANING….**

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

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

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

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

133 **1 TOP SAFETY GOAL**

- Use single-use items correctly
-

134 **CDC & CAL. REG.**

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

135 **PAPER UP? OR, PAPER DOWN?**

136 **VACUUM STERILIZER**

Single use water
Pre & post vacuum
Dry to dry time: 35-38 min.
Eliminates rust

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

138 **HOW FAST DO YOU NEED TO USE A FLASH-STERILIZED INSTRUMENT?**

139 **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

140 **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

141 **CHEMICAL INDICATORS**

CLASS 5 **CLASS 4**

142 **ARE YOU LABELING STERILIZATION PACKAGES?**

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

* Sharpee industrial permanent markers withstand 500 degrees

143 **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

144 **WHERE DO YOU LABEL?**

145 **5 TOP SAFETY GOALS**

- Organize sterilization pathway
- Instrument cassettes
- Instrument washer
- Monitor cleaning
- Use class V indicators
- Keep logs
  -
  -

146 **DUWL – RELATED DEATH (2011)**
LANCET

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

147 **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

148 **2016 *MYCOBACTERIUM ABSCESSUS***
INFECTIONS - CALIFORNIA

- 30 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
- Dentist ordered to stop using water (9/15/16)
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149 **2016 *MYCOBACTERIUM ABSCESSUS***
INFECTIONS - CALIFORNIA

- Pulpotomies must include pulp area "sterilization"
- And/or sterile standard
- Health Dept. ordered office to cease use of & replace on-site water system
- All DUWL must be tested

- www.ochealthinfo.com/dentaloutbreak
-

150 **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

151 **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
  -

152 **WHEN DOING SURGICAL PROCEDURES, DO YOU USE .....**

Sterile water & sterile separate delivery device?

153 **FOR POTABLE WATER**
YOUR OFFICE SHOULD:

A. Flush lines in AM & PM for 2 min./line
B. Flush lines between patients for 20 sec.
C. Purge lines weekly if using only water in bottles.
D. Purge lines @ 1 – 2 months if using disinfecting product in dental water

154 **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

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

- Loma Linda University Waterline Testing
- ProEdge Waterline Testing

156 **TREAT, SHOCK, AND TEST ALL WATERLINES**

157 **4 TOP SAFETY GOALS**

- Insure sterile water for surgeries
- Insure potable standard for non-surgeries
- Control waterline contamination
- Monitor waterline safety
-

158 **MEASURING RISK: DOSIMETERS**

159 **X-RAY DOSIMETERS – FIXED EQUIPMENT**

- Dosimeters not required with mounted units, BUT:
- Must prove each employee has $\leq$ 10% of 5 rems annual exposure.
- Use dosimeters periodically (1 year on, 2 years off…)
- Monitor with ANY new equipment
- Pregnant employees must wear dosimeters - entire pregnancy (as long as employer knows)

160 **X-RAY DOSIMETERS – PORTABLE EQUIPMENT**

- MUST wear dosimeters with portable x-ray systems
- Evaluate dosimeters monthly
- Records must be available to Dept. of Public Health
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161 **TOP (GENERAL) SAFETY GOALS**

- Written Safety Program
- Safety Manager
- Recognize & Understand Risks
- Implement Standard Precautions
- Plan for exceptions and accidents
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162 **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

163 **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

164 **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.

165 **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

166 **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

167 **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

168 **TOP 12 SAFETY GOALS**

12. PEP "Plan B"
    - Exposure incident package
    - Records
    - Follow-up
    - Stay alert for extraordinary cases

169 **IS THERE A CULTURE OF SAFETY WHERE YOU WORK?**

- Action list?
- Is your team know what you know?
- How do patients view your office?
- Make every patient visit the safest visit!

170 **WHAT YOU DO OVER & OVER**

171 **TEAMWORK!**