1 ☐ **UPDATE TB EPIDEMICS AND EVENTS**

2 ☐ **CAL OSHA & INFECTION CONTROL UPDATE**

4 Hours CE

By Nancy Dewhirst, RDH,BS
(949) 874-1776
nd@nancydewhirst.com

3 ☐ **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?
-

4 ☐ **TOP 5 SAFETY GOALS**

- Have a plan

5 ☐ **TOP 5 SAFETY GOALS**

- Have a plan
  - Written Safety Program
  - OSHA Manual, Bloodborne Pathogen Standard (CDA Practice Support)
  - OSHA = prohibited from regulating patient protection protocol
  - Go to CDC, CDB, ADA, OSAP
  -

6 ☐ **UPDATE & EDIT YOUR IC PLAN**

- Injury & Illness Prevention Program
  - OSHA manual (CDA)
- Location? Training?
- Instructions for Use & SDS
- Standard Operating Procedures (SOP's) = written step-by-step plans
- Must be specific & accurate
  - Surface disinfection
  - Hand hygiene
  - Instrument processing
  - Dental waterlines

7 ☐ **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)

8 **2016 CDC RECOMMENDATIONS**
http://www.cdc.gov/OralHealth/infectioncontrol/guidelines/index.htm

Checklists!
To be used along with 2003 Infection Control Recommendations

9 **TOP 5 SAFETY GOALS**

- Have a plan
  - Written Safety Program
- Assign a person

10 **TOP 5 SAFETY GOALS**

- Have a plan
  - Written Safety Program
- Assign a person
  - Safety Manager
  - Must be a leader
  - Qualified, trained, empowered
- Get certified
  - DANB.org, osap.org
  - https://www.osap.org/page/RoleofICPC? – OSAP initiative
  -

11 **DO YOU HAVE AN OFFICE SAFETY MANAGER?**

ARE THEY QUALIFIED?
WILL THEY BE A LEADER AND A MANAGER?
ARE THEY EMPOWERED?

12 **TOP 5 SAFETY GOALS**

- Have a plan
  - Written Safety Program
- Assign a person
  - Safety Manager
- Identify the enemy

13 **TOP 5 SAFETY GOALS**

- Have a plan
  - Written Safety Program
- Assign a person
  - Safety Manager
- Identify the enemy
  - Recognize & Understand Risks

14 **TOP 5 SAFETY GOALS**

- Have a plan
  - Written Safety Program
- Assign a person
  - Safety Manager
- Identify the enemy
  - Recognize & Understand Risks
- Keep everyone safe

15 **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

16 **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

17 **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

18 **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

19 **GENERAL SAFETY / PREPAREDNESS**

20

21

22

23 **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

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

25 **LABELING AND SIGNS**

26

27 **WHAT'S WRONG HERE?**

28

29 **WE'VE COME A LONG WAY…..**

30 **CHAIN OF INFECTION**

31 **BREAKING THE CHAIN**

32 **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

33 **IC 101**

- Isolate & separate
- Clean before disinfect / sterilize
- How do microbes die?
  - Heat (how hot? How cold?)
  - Chemicals (Which ones? What concentrations? How toxic?)
  - Is resistance likely?
- Are your systems working?
  - How do you know?
  -

34 **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.

35 **STANDARD PRECAUTIONS**

- Proven effective for controlling
  - Bloodborne diseases
  - Contact diseases

- Droplet diseases
-
- Not effective for airborne diseases

36 **THEY'RE NOT ALL BAD....**
BUT SOME ARE

37 **BLOODBORNE DISEASES**

EXAMPLES: HIV, HEPATITIS

38 **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).

39 **MOST LIKELY DENTAL EXPOSURES**

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

40 **RISK OF INFECTION AFTER NEEDLESTICK**

1 Source
HBV .....
HCV .....
HIV .....

2 Risk
6.0-30.0%
1.8%
0.3%

41 **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)

42 **HEPATITIS B**

1 1980 - 2013

2 Incidence declined since 1991
(infant vaccinations)

3 2018 CDC Report

4
- At least 21% increase in acute HBV cases
- ~21,000 new cases in 2016
- Due to injected drug use
- Grossly under-reported

Highest deaths: aged >55 years & Asians/Pacific Islanders

-
- Chronic cases also under-reported
  - 850,000 – 2.2 mil cases???
  - ~15,000 "new" cases - 2016

43 **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
- **Recombivax HB shortage (CDC April, 2018)

44

45 **STRETCH YOUR NECK: FRONT, BACK, SIDE TO SIDE.**

46 **HEPATITIS C (HCV)**

- Most common chronic bloodborne infection in U.S.
- 3.5 fold increase from 2010 to 2016
- 21.8% increase (2015 to 2016)
- (IV drug use & better reporting)
- 2.7 – 3.9 million Americans have chronic HCV
  - 4 X more than either HBV or HIV
  - In 2016: 15K HBV cases, 149K HCV cases
  -
- Most chronic HCV carriers are baby boomers
  - Born 1946 – 1964

- ~75% = unaware of infection

47 **BOOMER GENERATION**

48 **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
- Highest death rate: aged 55 – 64 years & Native Americans
- No vaccine (CDC April 2018)

HCV-related oral ulcerative lesions →

49 **DON'T WAIT FOR SYMPTOMS**

50 **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

51 **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

52 **INSECT-BORNE DISEASES**

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

53 **HIV UPDATE**

- 35 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
- Must be tested to get treated!
- Education is key

54 **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.

55 ☐ **IS YOUR TEAM SAFE?**

56 ☐ **SAFE INJECTION PRACTICES**

57 ☐ **SAFE INJECTIONS**

58 ☐ **SAFE RE-CAPPING**

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

59 ☐

60 ☐

61 ☐ **SHARPS & WASTE**

- Follow OSHA rules
- Dispose of <u>all sharp items</u> in puncture resistant containers
- Dispose of pharmaceutical waste as per EPA
- Dispose of contaminated solid waste as per EPA
  §1005 (b) (9, 22)
-

62 ☐

63 ☐ **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
  -

•

64 **ARE YOU SET UP?**

- Are you set up?
- Don't wait!
- Do it before the crisis

65 **WHAT'S WRONG WITH THIS PICTURE?**

66 **WHAT'S WRONG HERE?**

67

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

69 **ARMS CLASPED BEHIND BACK**

70

71 **EVEN WHEN WE WASH…….**

72 **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)

73 **FIRST WASH OF THE DAY**

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

74 **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

75 **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

76

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

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

D. 30 seconds

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

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

79

80 **MOST RECOMMENDED:**
COMBINED PROTOCOL

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

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

2 5 seconds
8 seconds
15 seconds
20 seconds

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

2 5 seconds
8 seconds
15 seconds
20 seconds

83 **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.

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

1 Plain soap – routine handwashing
2 Antimicrobial soap periodically

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

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

- Bar soap

86 **HAND ASEPSIS: DID YOU KNOW…**

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

87 **COMPROMISED SKIN**

- Non-intact skin may allow pathogens, irritants, allergens to enter
- May NOT treat pts. or handle pt. care items until dermatitis resolves
  - §1005 (b) (7)

88 **HAND HYGIENE**

- Required B4 & after glove use
- Why do we wash / sanitize every glove change?
  - Gloves fail
  - Organisms grow under gloves, doubling every 12 min.

§1005 (b) (8)

89 **DERMATITIS VS. ALLERGIES**

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

90 **CONFUSING SYMPTOMS**

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

91 **GET A DIAGNOSIS!**

92 **TATTOO, PIERCING RISKS**

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

93

Broken skin management:

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

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

95 **PPE: EYE PROTECTION**

96 **LOOK OUT!**

97 **THE PATIENT HAD HERPES LABIALIS**

98 **DENTAL ASSISTANT, CLEANED OP WITHOUT WEARING GLOVES,**

99 **HERPES WILL RECUR**

100 **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

101 **OCULAR HERPES**

102

103

104

105 **WHEN CAN YOU WEAR A FACE SHIELD WITHOUT A MASK?**

106 **ONLY FOR NON-DUST OR NON-AEROSOL WORK**

107 **WEAR MASK UNDER FACE SHIELD FOR LAB WORK & PATIENT CARE**

108 **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
-

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

110

111 **EXERCISE YOUR EYE MUSCLES!**

112 **FOCUS NEAR & FAR (BLINK)**

113 **PPE: GLOVES**

114

115 **GLOVES**

- How do they fit?
- Are you allergic or sensitive?
  - Latex?
  - Accelerators?
    - Thiuram
    - Carbamate

- Do you trust your gloves?
- 4% may leak
  - Buy quality
-

116 **HOW DO YOUR GLOVES FIT?**

117

118 **EXAM VS. FITTED?**

119 **HOW LONG DO GLOVES LAST?**

120 **HOW LONG DO GLOVES LAST?**

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

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

122 **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

123 **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

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

125

- When do you do hand hygiene?

126

- When do you do hand hygiene?

127 **CHOICES WITHIN REACH**

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

129

130 **BACK, HIP STRETCH**

131

132 **ATD TRANSMISSION**

2

- Inhalation of suspended particles
- Small fluid droplets dry in nano-seconds, float
- Particles remain indefinitely

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

- Require special building design & PPE for safety
- ATD patients must be screened and referred

134 **AIRBORNE <u>DISEASES</u>**

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

135 **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.

136

137 **ANNUAL FLU**

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

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

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

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

140 **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

141

142

143 **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

144 **KOLPIKS SPOTS**

145 **WHOOPING COUGH ADULT**

146 **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

147 **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

148 **SCARLET FEVER**

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

149 **SCARLET FEVER**

- Red lines at skin folds
-

150 **SCARLET FEVER**

- Flushed face, pale ring around mouth

151 **SCARLET FEVER**

Strawberry tongue or coated

152 **SCARLET FEVER**

- Fever ≥ 101 degrees
- Lymphadenopathy
- Difficulty swallowing
- Nausea, vomiting
- Headache

153 **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

154 **BREAK!**

155 **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?

156 **2017: CAMBODIA TB EPIDEMIC**

157 **ACTIVE TB**

158 **SCREEN FOR ACTIVE TB:**

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

159 ***MYCOBACTERIUM TUBERCULOSIS***

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

160

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

Instead of skin test:

- 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?
-
- NEXT: ATD screening form:

162 ☐ **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

163 ☐ **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

164 ☐ **RESPIRATORY HYGIENE /**
COUGH ETIQUETTE

165 ☐

166 ☐

167 ☐

168 ☐

169 ☐

170 ☐ **COVER YOUR COUGH SUPPLIES**

171 ☐ **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

172 ☐ **DENTAL WORKER HEALTH**

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

173 ☐ **WHAT'S YOUR WEAKEST LINK?**

174 ☐

175 ☐ **STRETCH BACK OF NECK**

- Turn head away from tight side
- Look down, feel stretch
- Hold chair on tight side
- Pull head forward with other hand
- Repeat, looking up

176 ☐ **PPE: SURGICAL MASKS**

- Masks are bi-directional barriers
- You & patients depend on them for:
- Coverage (mouth & nose)
- Filtration (particles, germs)
- Fluid protection
-

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

178 ☐ **MASK FILTRATION**

179 ☐ **IDENTIFY THE MASK YOU USE**

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

180 ☐ **ASTM LEVELS**

181 ☐ **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!
-

182 **MASK FIT**

183

184

185 **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

186

187 **CLINIC ATTIRE**

- Protective attire
- Comply with Cal/OSHA regs
-

§1005 (b) (5)

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

189

190 **STRETCH CHEST AND SHOULDERS**

- Place hands behind hips
- Inhale slowly, bringing elbows back
- Exhale slowly, bring elbows forward, bend head forward
- Stretch shoulders across your chest

191 **OPERATORY ASEPSIS**

192 **DENTAL AEROSOLS – VISIBLE?**

193 **REMOVE CLUTTER**

194 **SIMPLIFY SURFACES**

Environmental disinfection = cardinal feature in dentistry

195 **LOAD TRAYS OUTSIDE OPERATORY**

196 **WHAT IS YOUR PROTOCOL FOR RETRIEVING ITEMS DURING PROCEDURES?**

197 **BARRIERS PREVENT CONTAMINATION OF HARD-TO-CLEAN SURFACES**

198 ☐ **DISINFECT WHEN CHANGE BARRIERS?**

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

200 ☐

201 ☐ **MICROBIAL RESISTANCE TO KILLING**

- Prions
- Bacterial endospores
- Fungal spores
- Mycobacteria - *Mycobacteruim tuberculosis*
- Nonlipid or small viruses (Non enveloped) - *Polio virus, enteroviruses*
- Fungi - *Trichophyton spp.*
- 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)

202 ☐ **FOLLOW LABEL DIRECTIONS**

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

203 ☐ **CLEAN & DISINFECT – 2 STEPS!**

CLEANING	**DISINFECTION**	
Spray	Wipe	Spray

204 ☐ **CLEAN BEFORE DISINFECTING**

205 ☐ **LEAVE FOR STATED TIME**

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

It depends on technique
And product selection

207 ☐ **WHICH PRODUCTS CLEAN?**

208 ☐ **EFFECTS OF ALCOHOL CONCENTRATION**

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

210 ☐ **ONE OFFICE…. MANY PRODUCTS**

211 ☐ **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.

§1005 (b) (23,24)

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

213

214 **STRETCH BACK OF NECK**

- Turn head away from tight side
- Look down, feel stretch
- Hold chair on tight side
- Pull head forward with other hand
- Repeat, looking up

215

216 **STRETCH**

217 **WATER IN TUBES**

218 **DENTAL WATER QUALITY**

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

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

220 **2015 *MYCOBACTERIUM ABSCESSUS***
INFECTIONS - GEORGIA

- 9 pediatric infections confirmed after pulpotomies
  - 11 more probable cases
- Single location
- 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

221 **2016 *MYCOBACTERIUM ABSCESSUS***
INFECTIONS – ANAHEIM, CALIFORNIA

- >72 pediatric infections confirmed after pulpotomies, children hospitalized
  - Children developed cellulitis
  - Symptoms: persistent fever, swelling – does not respond to TX.
  - Symptoms start 15 – 85 days after TX.
  - TX = long term hospitalization, IV antibiotics
  - >500 patients notified

- *M. abscessus* = waterborne
- Facility closed, ongoing issue
  -
-

222 **N. A. MORALES POST-PULPOTOMY *MYCOBACTERIUM ABSCESSUS***

223 **N. A. MORALES, AFTER 1 MO. HOSPITALIZATION**

224 **2016 *MYCOBACTERIUM ABSCESSUS* INFECTIONS - CALIFORNIA**

Professional Standards:

- Pulpotomies must include pulp area "sterilization"
- And/or sterile standard
- All DUWL must meet potable standards
- Implies need to validate
  - www.ochealthinfo.com/dentaloutbreak
-

225 **JANUARY 1, 2019: NEW INFECTION CONTROL STANDARD FOR PROCEDURES THAT EXPOSE DENTAL PULP**

When performing procedures on exposed dental pulp, water or other methods used for irrigation must be "sterile or contain recognized disinfecting or antibacterial properties."

226 **CDB & DHCC BILL: ADDITION TO SECT. 1005**

- Using water, or other methods used for irrigation, that are not sterile or that do not contain recognized disinfecting or antibacterial properties when performing dental procedures on exposed dental pulp is unprofessional conduct.
-
- "Dental unit water lines shall be monitored following the instructions for use from the manufacturer of the dental unit or the dental unit waterline treatment product."
-

227 **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

228 **2 STANDARDS FOR DENTAL TREATMENT WATER**

- Surgical Standard: USP sterile water & sterile delivery system
  - Bulb or other syringe
  - Peristaltic pump, sterile lines
  - Aqua-Sept
    - http://www.cdc.gov/oralhealth/infectioncontrol/questions/oral-surgical-procedures.html

- Non-surgical dentistry: Potable (500 CFU/mL)
  - Chemical treatment
    - Reservoirs
    - Cartridges

§1005 (b) (18)

-

229 **WHEN DOING SURGICAL PROCEDURES, DO YOU USE …..**

Sterile water & sterile separate delivery device?

§1005 (b) (18)

230 **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.

231 **SIMPLE FLUSHING OF WATERLINES**

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

232 **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

233 **HOW WELL ARE WE DOING?**
DUWL TESTING RESULTS:

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

- Loma Linda University Waterline Testing
- ProEdge Waterline Testing

235 **USE ASEPTIC TECHNIQUE TO DRAW SAMPLES**

- May pool samples from single bottle
- Limit to 3 ports

236 **IN-OFFICE TESTING**

HPC sampler Aquasafe ™

237 **YOU CAN DO IT!**

238 **A FREE OFFER TO GET YOU STARTED**

239 **MAKE SURE YOU'RE WATER IS <u>SAFE</u>.**

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

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

242 **INSTRUMENT PROCESSING**
"TRAFFIC FLOW"

243 **RESPECT DIRTY CLEAN STERILE AREAS**

244 **HOW DO YOU TRANSPORT?**

-

→

245 **SAFE TRANSPORT?**

246 **CASSETTES, TUBS, TRAYS WITH LIDS**

247 **THIS IS NOT THE FIRST STEP!**

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

249 **ULTRASONIC CLEANING**
ALLOW BUBBLES TO WORK

250 **USE BASKET OR TONGS**

251 **CASSETTE DESIGN**

252

253 **IS THIS OK?**

254 **INSTRUMENT WASHERS & CASSETTES**

- Safer – less handling of sharps
- More efficient:
  - Saves ~ 1 hour / 9 pt. Set-ups
  - Space management:

Less space needed for instrument cleaning, sorting, ultrasonic, drying
- Software sends error messages to dealer & office
- 40 min. Cycle (dry)
-

255 ☐ **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

256 ☐ **ONLY SCRUB IF DEBRIS REMAINS AFTER CLEANING….**

257 ☐ **MONITORS HELP VISUALIZE SOIL REMOVAL**

NON-TOXIC <u>SYNTHETIC</u> BLOOD/DEBRIS

HOLDER ↓

258 ☐ **CHECK ULTRASONICS OR WASHERS**

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

260 ☐ **HANDPIECE ISSUES**
- Clean with soap & water, alcohol??
- Lubricate
- Wrap
- Leaked oil compromises paper barrier
  - Durability
  - Sterility

261 ☐ **SINGLE-USE VS. RE-USABLE ITEMS**

262 ☐ **IF YOU DON'T CLEAN IT**
- You can't disinfect it
- You can't sterilize it

263 ☐ **DENTAL ADVISOR STUDY**

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

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

264 **SINGLE-USE DISPOSABLES**

265 **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)
  -

266 **WHAT'S WRONG HERE?**

267 **PAPER UP? OR, PAPER DOWN?**

268 **PAPER UP? OR, PAPER DOWN?**

269

270 **WHAT'S WRONG?**

271 **WET WRAPS WICK & TEAR**

272 **WHAT'S WRONG?**

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

274 **EXCEPT THIS ONE!**

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

276 **IMMEDIATELY!**

277 **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

278 **CHEMICAL INDICATORS**

CLASS 5 **CLASS 4**

279 **ARE YOU LABELING STERILIZATION PACKAGES?**

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

280 **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

281 **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

282 **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

283 **WHERE DO YOU LABEL?**

284 **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

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

286 **MEASURING RISK: DOSIMETERS**

287 **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)

288 **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
-
-

•

Section 30253, California Code of Regulations (CCR), Title 17

289 **TOP (GENERAL) SAFETY GOALS**

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

290 **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

291 **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

•

292 **TOP 12 SAFETY GOAL**

6. PPE – <u>Use correctly</u> & 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.

•

•

293 **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
   -
   -

294 **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
-

295 **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

•

296 **TOP 12 SAFETY GOALS**

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

•

297 **RESOURCES**

- Join osap www.osap.org
  - Organization for Safety, Asepsis and Prevention

- CDA Practice Support
- State Dental Board, ADA,
- OSHA

298 ☐ **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!

299 ☐ **WHAT YOU DO OVER & OVER**

300 ☐ **TEAMWORK!**