

## 1 ☐ **CALIFORNIA INFECTION CONTROL ARE WE SAFE "ENOUGH"?**

## 2 ☐ **WHAT WE WILL COVER**

- CDB 16 CCR, §1005 IC regs
- Today's safety standards in perspective
- Basic tenants of infection control & prevention
- Rules: minimum standards
- Guidelines & best practices
- Resources
- What works best? Hierarchy of safety protocol
- Respiratory protection update
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## 3 ☐ **SAFETY IN PERSPECTIVE**

## 4 ☐ **SARS-COV-2 HAS CHANGED DENTAL SAFETY STANDARDS**

- ALL types of diseases, including aerosol-transmitted diseases:
  - Transmitted by asymptomatic people
  - Symptom screening = vital but not 100% effective
- Plan for safer buildings, more air management
- Upgrade traditional PPE
- Be ready

## 5 ☐ **DISEASE X NEXT PROBABLE INFECTIOUS DISASTER**

- 1 ☐ Pseudonym - Yet-unknown infectious pathogen capable of human-human transmission (all zoonotic)

WHO project: global health Preparedness for next possible threat

Goal: world cooperation, funding, SCIENCE

- 2 ☐ • Crimean-Congo hemorrhagic fever

- Ebola virus disease
- Marburg virus disease
- Lassa fever
- Nipah & henipaviral diseases
- Rift Valley fever
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- 3 ☐ • Influenza

- MERS
- SARS
- COVID-19

- Zika & Dengue

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- PRION diseases

## 6 ☐ ROUTES OF ENTRY

## 7 ☐ CHAIN OF INFECTION

## 8 ☐

## 9 ☐ SURGICAL STERILE STANDARDS VS. NON-SURGICAL DENTAL STANDARDS

- Surgical standards:
  - Surgical hand preparation
  - Sterile gloves
  - Sterile water
  - Sterile drapes / dressings
- Non-sterile standards – Standard & transmission – based precautions

## 10 ☐ IC 101

- Bloodborne, droplet, contact & airborne diseases may be transmitted asymptotically
- Isolate & separate
- Clean before disinfect / sterilize
- Understand methods for IC
  - Heat (how hot?)
  - Chemicals (Which ones? What concentrations? What contact time? How toxic?)
  - Is resistance likely?
- Are your systems working?
  - How do you know?
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## 11 ☐ 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
- 16 CCR, §1005(a)(1), (b)(1)

## 12 ☐ STANDARD PRECAUTIONS

- Proven effective for controlling
  - Bloodborne diseases
  - Contact diseases
  - Droplet diseases

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- Not effective for airborne diseases

### 13 ☐ **ELIMINATION & SUBSTITUTION**

- Phone & email: inform, assess, pre-screen, treat pts prior to appt & on arrival
  - Isolate, discharge, refer all symptomatic pts & HCWs

14 ☐

## **SCREEN OUT ALL INFECTIOUS PEOPLE**

### 15 ☐ **SCREEN FOR ALL INFECTIOUS RESPIRATORY CONDITIONS**

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- Do NOT treat patients with Aerosol Transmitted Diseases (ATD)
- Take Temperatures!

16 ☐

### **AEROSOL TRANSMISSIBLE DISEASES**

- Pathogens capable of surviving air suspension:
  - Desiccation
  - Travel on dust particles, air currents
  - Particles < 5 $\mu$  large enough for viral load, small enough to travel > 20'
  - Absorbed through conjunctivae, mucosal tissue of nose, respiratory tract
- 6' distancing is not enough
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### 17 ☐ **CRITERIA FOR DETERMINING RISK: TIGHTEN OR LOOSEN SAFETY CONTROLS?**

- Disease activity locally
  - Specific pathogen features (mode of transmission, transmissibility, severity)
- Mitigation strategies in place
  - Administrative controls
    - Rules, protocol, management (screening, source control...)
    - Eliminate/reduce contact & exposure
    - Tele-dentistry, distancing, barriers
  - Engineered safety devices / technology
    - Suction, HVAC, Air filtration & changes
  - PPE
- Vaccination status + immune profile
- Aerosol generating procedures
- Stay home if you're sick

18 ☐ **DENTAL WORKER SCREENING**

- HCW's self-assess temp. daily even if asymptomatic (100.0°F!)
- Symptomatic workers must be evaluated promptly
- If ill, mask & dismiss

19 ☐ **TUBERCULOSIS POLICY**

- MDR TB = worldwide risk
- Develop TB program appropriate to risk
- Screen patients:
  - History of TB?
  - Look for active cases of TB
- Dental workers: Tuberculin skin (TST) or blood (IGRA) test when hired & per risk

20 ☐ **MEASLES**

- 7-14 day incubation
- High fever, cough, runny nose, conjunctivitis
- @ 2-3 days: Koplik spots
- @ 3-5 days: Rash (from hairline progresses down body)
- Ear infections, diarrhea, pneumonia, encephalitis (brain swelling), deafness, intellectual disability, death
- Vaccine refusal
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21 ☐ **OTHER AIRBORNE DISEASES**

Primarily aerosol – transmitted:

- Measles
- Varicella (including disseminated zoster)
- Tuberculosis

Aerosol & droplet transmitted:

- Flu, SARS, Pertussis, mumps, meningitis
- Do NOT treat without special precautions
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22 ☐ **SCREEN FOR ALL ATD'S  
TB, FLU & OTHER ATD'S**

- 1 • TB
  - Fever, cough....
- Flu
  - Fever?
  - Body aches?
  - Runny nose?
  - Sore throat?

- Headache?
- Nausea?
- Vomiting or diarrhea?
- Severe fatigue

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Fever = 100.0°F

If yes, re-appoint, refer

- 2
- Pertussis, measles, mumps, rubella, chicken pox, meningitis, pneumonia
  - Fever, respiratory symptoms +
  - Severe coughing spasms
  - Painful, swollen glands
  - Skin rash, blisters
  - Stiff neck, mental changes

### 23 ☐ **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

### 24 ☐ **NOROVIRUS**

- Most common cause - acute gastroenteritis in U.S.
- Symptoms: extreme vomiting & diarrhea
- Infective dose: <100 virions. Ill people shed billions even >2 weeks after symptoms resolve
- Ingestion: food, water, hand-to-mouth (restaurants), recreational & drinking water
- No vaccine, hand sanitizers not effective

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### 25 ☐ **POLIO**

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- 1980's – eradicated in U.S.
  - July/August, 2022: 1 w/ paralysis
  - Tip of the iceberg
  - Don't forget iron lungs
  - Fecal-oral transmission
- Vaccine - preventable
- Unvaccinated children!
- Surface disinfection, x-contamination, PPE

### 26 ☐ **VACCINES CAN PREVENT ILLNESS / DEATH**

27 ☐ **HOW DO WE COMBAT  
FEAR & DIS-INFORMATION?**

28 ☐ **WITH SCIENCE & LOGIC  
VACCINE BASICS:**

- All vaccines: ~5-10% of vaccinated may not respond (or weakly)
- Vaccines assist immunity,
  - Build antibodies ~ 2 weeks
- Host's immune system determines the strength of both recovered (convalescent) & vaccine immunity
  - Immunocompromised likely to have less & shorter immunity
- Pathogens evolve (flu)

29 ☐ **4 TYPES OF VACCINES**

30 ☐ **4 TYPES OF VACCINES**

31 ☐ **VACCINES MAY REDUCE CVD RISK**

- Flu & COVID infections raise heart attack & stroke risk 3-5% in weeks following illness
  - After flu: 4 X > heart attacks, 5 X > strokes
  - After COVID: 3 X > heart attacks & strokes (14 weeks – 1 year)
- Chronic HIV, HCV & Varicella zoster (shingles) increase cardio events
  - HIV+ - 60% > heart attacks, 45% > strokes
  - HCV+ - 27% > heart attacks, 23% > strokes
  - Shingles: 12% > heart attacks, 18% > strokes
- Inflammation: > risk of formation & rupture of ATO plaques
- Vaccinations reduce risks [Some acute and chronic viral infections may increase the risk of cardiovascular disease | American Heart Association](#)

32 ☐ **VACCINES REQUIRING BOOSTERS**

- Tetanus, diphtheria, Pertussis (Tdap, Td)
  - @ 10 yrs
- Hepatitis B ?
  - 30 yrs to lifetime
  - Immunocompromised, poor response
- Influenza
  - Yearly
- COVID-19
  - Annually, new variants, per risk
- Pneumococcal & meningococcal dis.
- HPV per age, risk
- 
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33 ☐ **MAKE SURE YOU ARE PROTECTED!**

- 1 • HBV
- HAV

- Influenza
- Measles
- Mumps
- Rubella
- Varicella-Zoster
- Polio

- [www.CDC.gov](http://www.CDC.gov): new adult vaccine recs
- OSHA policies:
  - New hires & employees
- Boosters!!
- 

- 2
- Tetanus, diphtheria
  - Pertussis
  - Pneumonia
  - Meningitis
  - HPV
  - MPOX

#### 34 ☐ **ENGINEERING CONTROLS**

Physical protection

#### 35 ☐ **BUILDING SAFETY STANDARDS**

- IAQ (healthy vs. Sick buildings)
  - Airborne diseases
    - Legionella, viruses, molds (Coccidioides, Valley Fever)
  - Indoor chemical pollutants – high during operating hours
    - VOCs, CO<sub>2</sub>, particulates
  - Allergies, illness
- U.S. medical settings must meet healthcare building codes
  - Air changes / hour (ACH) – set for medical hospitals
  - (Dental???)
- Dental is under business codes currently. Changing....
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#### 36 ☐ **ENGINEERING CONTROLS**

Built-in solutions for room air management

- HVAC: Motors, ducts, filters
- Optimize building HVAC fresh air changes, cycles, filtration
  - Best HVAC filters = MERV 13
  - Most common = MERV 6-7
  - HEPA filters = MERV 17
- Maintain ducts & filters
- Fit matters! Bypass airflow is not filtered

#### 37 ☐ **ENGINEERING CONTROLS**

- Separate HEPA air cleaners
- Goals:
  - > circulation, air movement
  - Controlling airflow direction
  - Filtration
  - Source capture (external suction)
- Consider moist aerosols
- Validate equipment claims
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### 38 ☐ **HEPA FILTER UNIT CONSIDERATIONS**

- Air movement capacity: CFM (cubic feet per minute)
- Certified & clinically tested: meet CDC ACH standards
- Noise level
- Replaceable filters
- Location, air-flow direction

### 39 ☐ **SOURCE CAPTURE EQUIPMENT**

GOAL: Contain aerosols as much as possible, as close to the source as possible

- Saliva ejectors remove fluids, not aerosols
- High Volume Evacuation (HVE)
  - More effective on larger droplets than aerosols – but remove some air
  - Rebalance system: hygiene HVE = operative HVE power
- Extraoral suction
  - More effective on aerosols

### 40 ☐ **ROOM AIR CONTROL: PHYSICAL MODIFICATIONS?**

- Space dividers, walls, screens, windows, curtains (must tolerate disinfection & NOT stagnate air flow)
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### 41 ☐ **ULTRAVIOLET GERMICIDAL IRRADIATION (UVGI)**

- Targets air & surfaces
- Directional (shadows)
- Must vacate room at higher doses
- Efficacy requires specific dosage, airflow, time
- MUST consider ozone emissions

### 42 ☐ **FANS & AIR MOVEMENT**

- Place in windows, doors on exhaust mode
- Roof fans: exhaust to outside
- Defeat auto efficiency settings: run fans 24/7
- Open windows (even slightly)



- New HEPA filters can minimize air resistance
- Air direction: dirty-to-clean, away from operator
- Consult industrial hygienist, HVAC or structural engineer
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43 ☐ **HVE REQUIRED! – NEED 7-10 CUBIC FT/MIN  
SALIVA EJECTORS = INADEQUATE**

44 ☐ **PRE-PROCEDURAL RINSES – LIMITED, TRANSITORY:**

- Repeat rinses
  - 1-1.5% hydrogen peroxide
  - 0.2% povidone
  - ioRinse (molecular iodine)
  - Dilute bleach (corrosive)

45 ☐ **RECAP: VENTILATION STRATEGIES**

- Single operatories
- Generate less aerosol
- Optimize HVAC air changes
- Separate HEPA filters
- Optimize direct suction, exhaust equipment
- Between patients:
  - Vacate room after procedure:
  - High speed ventilation
  - UV
- Open windows?

46 ☐ **OTHER ENGINEERING CONTROLS**

- Needle caps
- Sharps containers
- Distances and walls: isolation / separation
- Equipment safety features

47 ☐ **ADMINISTRATIVE CONTROLS**

- Rules, training, consensus
- Infection control coordinator
- Respiratory protection program
- Standard Operating Procedures
  - Written steps
  - Checklists
  - Records
  - Enforcement
  - Training

48 ☐ **HIERARCHY OF RULES**

- OSHA: Occupational Safety & Health Administration laws
  - Based on CDC, NIOSH, ANSI recs
- State Board laws

- Include CDC & OSHA standards
- Civil & Health Dept.... laws
- FDA, EPA laws
- Instructions for use
- CDC Recommendations
  - Based on research
  - Set standards, not "laws" unless by reference
- Consensus standards
  - NIOSH, ANSI used to determine "appropriate" to meet OSHA general industry safety standards
  - Expert statements, State Associations, ADA, OSAP (compliance = common, voluntary)
- Competition, marketing, reputation

16 CCR, §1005

#### 49 ☐ **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

Applies to all – potentially exposed

*All DHCP must comply with & follow OSHA laws*

16CCR, §1005 (a) (13), (b) (1-3)

[https://govt.westlaw.com/calregs/Document/IDB85BD734C8111EC89E5000D3A7C4BC3?viewType=FullText&listSource=Search&originationContext=Search+Result&transitionType=SearchItem&contextData=\(sc.Search\)&navigationPath=Search%2fv1%2fresults%2fnavigation%2fi0a89994c00000191c42fa5d156a35247%3fpccid%3df7e08c2e65b04a35b9a99f40dcd263dc%26Nav%3dREGULATION\\_PUBLICVIEW%26fragmentIdentifier%3dIDB85BD734C8111EC89E5000D3A7C4BC3%26startIndex%3d1%26transitionType%3dSearchItem%26contextData%3d%2528sc.Default%2529%26originationContext%3dSearch%2520Result&list=REGULATION\\_PUBLICVIEW&rank=1&t\\_T1=16&t\\_T2=1005&t\\_S1=CA+ADC+s](https://govt.westlaw.com/calregs/Document/IDB85BD734C8111EC89E5000D3A7C4BC3?viewType=FullText&listSource=Search&originationContext=Search+Result&transitionType=SearchItem&contextData=(sc.Search)&navigationPath=Search%2fv1%2fresults%2fnavigation%2fi0a89994c00000191c42fa5d156a35247%3fpccid%3df7e08c2e65b04a35b9a99f40dcd263dc%26Nav%3dREGULATION_PUBLICVIEW%26fragmentIdentifier%3dIDB85BD734C8111EC89E5000D3A7C4BC3%26startIndex%3d1%26transitionType%3dSearchItem%26contextData%3d%2528sc.Default%2529%26originationContext%3dSearch%2520Result&list=REGULATION_PUBLICVIEW&rank=1&t_T1=16&t_T2=1005&t_S1=CA+ADC+s)

#### 50 ☐ **EVOLVING RULES, RECOMMENDATIONS:**

- Follow existing rules for worker protection based on risk
- Follow CDC [recommendations for healthcare](#)
- Increase precautions when risk is recognized
  - When public health risks announced
  - Based on modes of transmission

#### 51 ☐ **CAL RESOURCES**

- When and Why to Wear a Mask

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Respiratory-Viruses/When-and-Why-to-Wear-a-Mask.aspx>

- Guidance for Ventilation, Filtration, and Air Quality in Indoor Environments to Reduce Risk of Respiratory Infections

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/Interim-Guidance-for-Ventilation-Filtration-and-Air-Quality-in-Indoor-Environments.aspx>

- Weekly Respiratory Virus Report

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/RespiratoryVirusReport.aspx>

## 52 ☐ **OSHA REG'S**

Bloodborne Pathogen standard

(29 CFR 1910.1030)

(BBP does not address respiratory secretions)

Personal Protective Equipment

(29 CFR 1910.132 & 133)

Respiratory Protection standards

(29 CFR 1910.134)

Recordkeeping

(29 CFR 1904)

OSHA incorporates CDC, ANSI, NIOSH rules by reference

## 53 ☐ **CAL/OSHA – CCR TITLE 8 REGULATIONS CA DEPT. OF HEALTH SITES**

- § 5193. Bloodborne Pathogens.

- <https://www.dir.ca.gov/title8/5193.html>

- §5144. Respiratory Protection.

- <https://www.dir.ca.gov/title8/5144.html>

- §5199. Aerosol Transmissible Diseases: "The ATD standard"

- <https://www.dir.ca.gov/title8/5199.html>

- Must screen and exclude ATDs to be exempt

- CA Dept. of Pub. Health: When and Why to wear a Facemask:

- <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Respiratory-Viruses/When-and-Why-to-Wear-a-Mask.aspx>

- CA Dept. of Pub. Health: Respiratory virus report

- <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/RespiratoryVirusReport.aspx>

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## 54 ☐ **OSHA'S GENERAL DUTY CLAUSE**

- All employers will furnish a place free from RECOGNIZED hazards that cause or are likely to cause death or serious physical harm

- "recognized": by industry, employer, or common sense

- Ex: encourage employees to be vaccinated, use PPE, safe practices (recognized by OSHA as best precautions)

- MUST comply with all OSHA standards

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- Each employee shall comply with OSHA standards and all rules, regulations related to their own actions

## 55 ☐ **UPDATE & EDIT YOUR IC PLAN**

- Add addendum to Injury & Illness Prevention Program
  - Written resp. Protection plan
- ATD screening & plan (Aerosol Transmitted Diseases)
- CDC updates & IC recommendations

## 56 ☐ **WHO'S IN CHARGE OF YOUR SAFETY?**

- Leaders should be:
  - Qualified
  - Empowered
  - Invested in the culture of safety
- Safety is a team sport! You need a leader
- Not just the authority, order-giver, enforcer!
- Build a safety team:
  - Educate, motivate, empower, encourage the team
  -

## 57 ☐ **INFECTION CONTROL COORDINATOR**

- Assign a person
  - Safety Manager
  - Must be a leader
  - Qualified, trained, empowered
  - Any of us might qualify!
- Get certified: Dental Infection Prevention and Control (CDIPC)  
 Email: [office@MyADS.org](mailto:office@MyADS.org)  
 Phone: +1 (410) 571-0003

## 58 ☐ **ADS**

Why join?

- "Go to" source for all infection prevention and patient safety questions.
- New, robust website includes best practices, tool kits, and member forums allowing you to network with global infection prevention leaders.

MyADS.org

join today!

## 59 ☐ **ADS NEWSLETTER**

- 2 Link policy to practice
  - Every 2 months
  - Scenarios
  - Problem solving
  - Checklists, references
  - Tools
  - Real issues!

60 ☐ **CULTURE OF SAFETY**

- Dental safety team
- Shared knowledge
  - Training
  - Meetings, huddles
  - Open communication
- Shared values

61 ☐ **DENTAL OFFICE  
SURFACE ASEPSIS**62 ☐ **OPERATORY ASEPSIS****2 CHOICES:****COVER IT OR DISINFECT IT**

63 ☐ **USE FDA CLEARED MEDICAL GRADE BARRIERS  
(TESTED FOR VIRAL & BACTERIAL PENETRATION)  
IF CLEANING & DISINFECTION WILL HARM SURFACE / DEVICE  
CHANGE: EACH PATIENT, WHEN VISIBLY CONTAMINATED / DAMAGED  
§1005 (B) (19)**

64 ☐ **CHEMICAL CLEANING & DISINFECTION  
FOLLOW LABEL DIRECTIONS**

- Clean (surfactant) before disinfecting
    - High alcohol fixes proteins to surfaces
  - Proteins neutralize disinfectants
  - Wear Utility gloves
- (CDC), CCR16, §1005(a)(8,10), (b)(4, 5, 10, 11, 20)

65 ☐ **DISINFECT**

- Personal items
  - Housekeeping surfaces:
    - Soap & water or EPA low-level
    - With blood, OPIM: intermediate-level
  - Critical surfaces: low to intermediate-level
  -
- (CDC), 16 CCR, §1005(b)(11,14, )

66 ☐ **STERILIZATION & DISINFECTION**

- Prions
- Bacterial endospores
- Fungal spores
- "Cold sterile" - (some spores)
- Mycobacteria - *Mycobacterium 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, hepatitis A, B & C, HIV, Ebola, SARS CoV-2* (CDC, 16 CCR, §1005(a)(5,6,7,8,9) (b)(20))

67 ☐ **"SINGLE-STEP CLEANER-DISINFECTANT"**

68 ☐ **LEAVE FOR STATED TIME**

69 ☐ **BLOODBORNE DISEASES  
(BLOOD & FLUIDS = INFECTIOUS)**

**EXAMPLES: HIV, HEPATITIS**

70 ☐

**MOST LIKELY DENTAL EXPOSURES**

- Percutaneous
  - Needles
  - Burs
  - Instruments, files
- Compromised skin
- Mucosal exposure
- HBV = efficiently transmitted directly & indirectly (survives on surfaces – 7 days)
- Other pathogens (ex: HCV) can remain infectious on surfaces – 1 month

71 ☐ **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)

72 ☐ **SHARPS & WASTE**

- Follow OSHA rules
- Do not bend/break needles
- Dispose of all sharp items in puncture resistant containers near source
- Dispose of pharmaceutical waste as per EPA
- Dispose of contaminated solid waste as per Fed. & state EPA

OSHA, CDC, CCR16, §1005(b)(9,22)

### 73 ☐ LAB SAFETY

- Splash shields, equipment guards
  - Fresh pumice
  - New / sanitized rag wheels
  - Disinfect appliances, impressions
  - Store aseptically
  - Rinse B4 delivery to patient
- 16 CCR, §1005(b)(23,24)

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### 74 ☐ POST EXPOSURE MANAGEMENT

- Know your immune status: HBV booster needed???
- Exposure packet
  - Phone numbers, forms, driving directions, payment arrangements
- Direct MD re: testing, disclosure
- Rapid HIV, HCV testing – SOURCE PERSON
- Response windows for maximum PEP effect:
  - HIV - ART – 72 hours
  - HBV – 24 hours: HBV vaccine, HBIG
- Follow-up testing may be advised
- Counseling
  -
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### 75 ☐ HEPATITIS B CDC 2023 UPDATES

- Screen all >18 years at least once – triple panel test
  1. HBsAg
  2. Antibody to HBsAg (Anti-HBs)
  3. Total antibody to core antigen (anti-HBc)

### 76 ☐ HEPATITIS B CDC 2023 UPDATES

- Screen all pregnant, each pregnancy for HBsAg
  - Regardless of history of tests or vaccine
- Risk-based testing for:
  - Incarcerated
  - Multiple sex partners
  - HCV (+)
- Test anyone who asks for test

[https://www.cdc.gov/mmwr/volumes/72/rr/rr7201a1.htm?s\\_cid=rr7201a1\\_w](https://www.cdc.gov/mmwr/volumes/72/rr/rr7201a1.htm?s_cid=rr7201a1_w)

## 77 ☐ **2 STANDARDS FOR WATER SAFETY**

- Sterile - for surgery, (cutting bone, normally sterile tissue)
  - 0 CFU/mL of heterotrophic water bacteria
- Potable - for non- surgical procedures -
  - 500 CFU/mL of heterotrophic water bacteria (meets EPA safe drinking water standards)
 CDC, OSAP, EPA, Dental Board §1005 (b) (18)

## 78 ☐ **FOR POTABLE WATER YOUR OFFICE SHOULD:**

- Use non-retracting dental units
- Shock dental unit – start with clean system
- Add high quality source water
  - FRESH drinking water
- Flush or purge lines in AM for 2 min./line (handpieces, tips off)
- Flush lines between patients for 20 sec.
  - (Flushing does not remove attached biofilm)
- Add antimicrobial product to patient treatment water
- Shock periodically – remove attached biofilm
- Follow Manufacturer's directions for use (dental equipment & DUW product)
- Monitor water (test) §1005 (b) (21)

## 79 ☐ **WATERLINE TREATMENT OPTIONS**

- Chemical "Shock" - removes biofilm temporarily
  - Liquid Ultra, Sterisil, (bleach not approved)
  - Caustic, may injure tissue. Rinse !
- Continuous chemical "maintenance" - lowers biofilm, keeps CFU's low.
  - DentaPure 1 /year (dry bottle at night)
  - BluTube 1/6 months
  - BluTab (Silver ions) – ProEdge (keep bottle on)
  - Sterisil / Citrisil
- Requires access to DUWL

## 80 ☐ **BIOCIDES: WHERE DO YOU ACCESS YOUR DUWL?**

- Bottles (reservoirs): add biocide to bottle by:
  - Tablet
  - Liquid
  - Cartridge (straw)
- In-line cartridges, not in bottles:
  - In cabinet or junction box of dental unit
- Multi-unit water system:
  - Large cartridges serving multiple rooms/units
- Follow MIFU – unit & chemicals
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81 ☐ **DETACHABLE EQUIPMENT ASEPSIS**82 ☐ **HOW DO YOU KNOW YOUR WATERLINES ARE SAFE?**

- Commercial lab testing
- Test quarterly, rotating lines (empiric evidence, not regulated in CAL)

83 ☐ **IN-OFFICE WATER TEST**

- Specific to DENTAL water
- 48-72 Hour Incubation
- Neutralization formula within the paddle
- Colonies easy to see & count
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- Get samples at CDA!

84 ☐ **EXAMPLE: IN-OFFICE 15 MIN. TEST  
PASS / FAIL @ 500 CFU**85 ☐ **WATERLINE TESTING PLAN**

- Assign trained person
- Test monthly in office
  - Fail? Shock, re-test (immediately & 1 week)
  - Fail again? Lab test, consult
- Test quarterly – mail-in lab test
  - Fail? Consult
- Records
- 

86 ☐ **TREAT, SHOCK, AND TEST ALL WATERLINES**87 ☐ **INSTRUMENT PROCESSING:  
HIGHEST LEVEL OF ASEPSIS**88 ☐ **PRE-CLEANING & HOLDING/SOAKING:  
AVOID SCRUBBING LATER**89 ☐ **ENZYME PREVENTS DEBRIS ADHERENCE**90 ☐ **ULTRASONIC CLEANING:  
ALLOW BUBBLES TO WORK**91 ☐ **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)
- Waste water safely disposed; reduces aerosols
-

92 ☐ **CHECK ULTRASONICS OR WASHERS WITH WASH-CHECKS**

93 ☐ **CDC & CDB PROFESSIONAL STANDARD**

- Treat as semi-critical:
  - Must heat sterilize ALL:
    - Removable handpieces (high & low speed)
    - Rotary components
    - Reusable attachments (AWS tips, ultrasonic scaler tips...)
  -
- §1005 (b) (15)

94 ☐ **STERILIZER MONITORING**

- Indicators: per package
    - Heat
  - Type 5 indicators: per load or pack
    - Time, temperature, pressure
  - Biological Monitors: weekly
    - Non - pathogenic spores
    - Keep written reports 1 yr
- §1005 (b) (17)

95 ☐ **2 STERILIZATION LOGS**

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

96 ☐ **SAFETY: PERCEPTION & REALITY**

- Label instrument packages (date)
  - Expiration of wrap
  - In case of failed spore test
- Keep packaged until used
  - If unwrapped for (flash) sterilization, use immediately
- Store covered, away from "splash zone"
- Prevent cross - contamination
- "Present" sterile packs to patient
- 

97 ☐ **SOMETIMES INSTRUMENT PROCESSING ISN'T THE ANSWER**

98 ☐ **IF YOU DON'T CLEAN IT**

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

99 ☐ **DENTAL ADVISOR STUDY**

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

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

100 ☐ **SINGLE-USE DISPOSABLES**  
**CCR16, §1005 (B)(14)**101 ☐ **PPE: PERSONAL PROTECTIVE EQUIPMENT**

## 2 Required for spray or spatter of:

- Droplet nuclei
- Blood
- Chemical / germicidal agents
- OPIM
- 
- Remove when leaving patient care areas
- Follow OSHA rules

16 CCR, §1005(b) (4, 5)

102 ☐ **MASKS REGS & OPTIONS**

- MUST: Masks while in office appropriate to exposure
    - FDA / NIOSH-approved PPE
    - Mask, eyewear/faceshield
  - BEST: based on risk
    - Respirators for aerosols
    - Respirators (or masks & face shield) for non-aerosol pt. Care
- CDC, CCR16, §1005(b) (4)

103 ☐ **PPE: SURGICAL MASKS**

- Masks are bi-directional physical barriers
  - Mostly keep germs in – protect others!
  - Limited protection for user
  - Single-use
- CCR16, §1005(b) (4)
- -

104 ☐ **KNOW MASK LIMITS**

- Level 3 filters most bacteria - No viral claims
  - Mask degrades from;
    - Perspiration
    - Talking
    - Sneezing
    - Length of time mask is worn
    - Dust, spray
  - Shield may lengthen use-life
    - Disinfect / dispose between patients
  - 20 min - 1 hour! (normal conditions)
- CCR16, §1005(b) (4)

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105 ☐ **RESPIRATORS (VS. MASKS)**

- Only respirators protect against airborne chemicals, fumes, vapors, infectious pathogens
- N-95 masks filter  $\geq 95\%$  particles
- Look for label on outside
- Effectiveness = highly dependent on fit & use

106 ☐**RESPIRATORY PROTECTION PROGRAM**

- Fit-tested respirators
  - N-95, N-100, elastomeric Half-Mask and Full Facepiece
  - Powered Air-Purifying Respirators (PAPR)
  - R & P-95 to 100 respirators
- Initial fit test required (qualitative)
- Health screening questionnaire (determine safety for user)
- Training

107 ☐ **BEARDS & SURGICAL MASKS**

- Facial fit not as critical as for respirators
- Beards lift mask from face, may reduce protection
- Beards - not prohibited if respiratory protection is not required
- Have beard policy for respirators

108 ☐ **FACIAL HAIR & RESPIRATOR SEAL**109 ☐ **KN95 RESPIRATORS**

- KN95 = Chinese designation of filtration (N95 = U.S.)
- Same filtration
- KN95 – earloops, slightly more (8%) seal leakage
- MUST be NIOSH approved
- NOT acceptable by OSHA if N95 is required

110 ☐ **USER SEAL CHECK – EACH TIME**

111 ☐ **EYE HAZARDS**

- Dental drilling generates debris @ 50 MPH
  - Blood & oral fluids: pathogens
  - Tooth material
  - Calculus
  - Pumice
  - Broken dental burs
  - Restorative material pieces
  - Aerosols not addressed by previous regs

112 ☐ **LOOK OUT!**

**PROTECT YOUR EYES!**

113 ☐ **2 ISSUES: PARTICULATE INJURY & INFECTIOUS FLUIDS**

114 ☐ **IS THIS OK?**

115 ☐ **BOTTOM GAP**

116 ☐ **EYEWEAR**

- Eyewear is essential for aerosolizing procedures  
 Eyewear must have side protection, fit closely
- Remove, reprocess eye/face shields when soiled
  - Discard disposable eyewear, face shield after use
  - Treat as contaminated (touch precautions)
  - Leave pt care area to remove eye/face shields
  -

117 ☐ **FACE SHIELD DESIGN**

**TOP, FRONT, SIDE AND BOTTOM PROTECTION**

118 ☐ **LASER PLUME PROTECTION**

- Plume extends far beyond "safe" beam distance,
  - Plume can infect eyes
  - N95 / N100 respirators
  - Facial fit = vital
  - Fluid resistance
  - Wide HVE,  $\leq 2"$  from source
  - Extraoral evacuation
  - Laser Safety Officer
- ANSI Z136\_3\_2018

119 ☐ **CLINIC ATTIRE**

- Protective attire
- PPE = outer barrier
- Comply with OSHA regs
- Change / pt.

- Remove to leave clinic
- Hot water & detergent!
- 

CCR16, §1005 (a) (11), (b) (5)

Title 8, CCR §5193

120 ☐ **HAIR COVERING**

Bonnets protect absorbent hair

121 ☐ **CALIFORNIA REQUIRES X-RAY SHIELDS**

[Title 17 of the California Code of Regulations \(CCR\)](#)

122 ☐ **HAND HYGIENE  $\geq$  20 SECONDS OF LATHERING**

Focus on.....

- Fingernails
- Cuticles
- Webs
- Thickened skin
- Damaged skin
- Thumbs
- Wrists

123 ☐ **MOST RECOMMENDED:  
COMBINED PROTOCOL**

- 1 ☐ • Plain soap – routine handwashing, soiled hands
  - 2 ☐ • Antimicrobial / alcohol hand rub on unsoiled hands
- 16 CCR, §1005(b) (6)

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

- 5 seconds
- 8 seconds
- >15 seconds
- 60 seconds
- 

125 ☐ **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"
  - Must have > 60% ETOH
- Contact time: >15 sec.

126 ☐ **COMPROMISED SKIN**

- Non-intact skin may allow pathogens, irritants, allergens to enter
- May NOT treat pts. or handle pt. care items until weeping dermatitis resolves
  - §1005 (b) (6,7)

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

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

128 ☐ **UNDER THOSE GLOVES.....**

- Gloves create moist environment
- Microbes reproduce 4,000 times/ hour under gloves
- Trapped microbes are not removed
- Transient flora colonizes skin under rings & fingernails – becomes Resident flora
- Fingernail fungus and bacterial infections under enhanced nails
- “Greenie” – pseudomonas nail infection

129 ☐ **DRESS CODE: BEST PRACTICES  
SAFETY & PROFESSIONALISM**

- No large, sharp, wide rings
  - Harbor microbes, prevent cleaning
  - May cause & spread infections
  - May damage gloves
- No long, enhanced, false, sharp fingernails
  - Same reasons
  - Pokes patients
- Fingernails  $\leq$  end of finger
- No loose bracelets, hide watches under gowns
- Cover hair or pull back neatly

130 ☐ **PATIENT TREATMENT GLOVES**

Wear to protect from:

- Mucous membranes
- Blood
- OPIM
- Germicidal agents

Pre-clinical, clinical, post-clinical, lab procedures

Hand hygiene & dry B4 & after use

CCR 16 §1005 (b) (6,8)

131 ☐ **RESPECT GLOVE LIMITS!**  
**WHAT DESTROYS GLOVES?**

- Soap & water
- Oils – all types
- Petroleum, lanolin, mineral, palm & coconut oils
  - Emollients in products
  - Make-up
- Sweat, dental materials
- Stretching, donning, removing
- Use!!!-
- 4% have pin-holes

CDC MMWR 2003 16 CCR §1005 (b) (8)

132 ☐ **CHOICES WITHIN REACH BUT AEROSOL-PROTECTED**

133 ☐ **CALIFORNIA INFECTION CONTROL**  
**ARE WE SAFE “ENOUGH”?**