

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

- 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?
  -

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**

- 
- 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
  -

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
- 
- 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
- 

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%3fppcid%3df7e08c2e65b04a35b9a99f40dc263dc%26Nav%3dREGULATIION\\_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%3fppcid%3df7e08c2e65b04a35b9a99f40dc263dc%26Nav%3dREGULATIION_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](https://www.osha.gov/laws-rules/29 CFR 1910.1030))

(BBP does not address respiratory secretions)

Personal Protective Equipment

([29 CFR 1910.132 & 133](https://www.osha.gov/laws-rules/29 CFR 1910.132 & 133))

Respiratory Protection standards

([29 CFR 1910.134](https://www.osha.gov/laws-rules/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
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(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)
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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
- 
- 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
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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
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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"?**