Dentistry in the Time of COVID-19

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Intended Audience

This webinar is being presented to aid dental facilities in planning to resume or increase operations during the COVID-19 pandemic.

The focus is on key issues and prevention strategies to consider prior to resuming or increasing patient care in dental facilities based on what we know about COVID-19.
Acknowledgement
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Objectives

• Describe COVID-19 disease and transmission.
• Use the Infection Prevention hierarchy for COVID-19 planning.
• Describe strategies to reduce risks to patients and staff.
• Understand the steps to provide safe dental care.
COVID-19
Introduction
What is COVID-19?

- **Historical:**
  - 2002: SARS-CoV-1
    - 770 deaths
    - Died out w/in 1 year
  - 2012: MERS
    - 800 deaths
    - Still exists
  - Both: Symptoms present prior to transmissibility

- **Recent:**
    - 9,157,320 confirmed cases
    - 473,849 global deaths (as of 23 June 2020)
  - Transmissibility *prior* to symptoms

How is COVID-19 Transmitted?

- Person to person via droplets
- Airborne transmission (aerosol generating procedures)
- Touching contaminated surfaces

Key Points of Transmission

− Droplet and/or contaminated surfaces
− AGPs increase risk of exposure
− Symptoms: fever, cough and shortness of breath
− People at higher risk
− *Pre-symptomatic and asymptomatic people have tested positive for COVID-19 and linked to transmission*

Recent Reports: Saliva & Coronavirus

  - Virus detected in saliva of 11/12 patients (91%)

  - Compared with symptomatic individuals, asymptomatic people were less likely to have detectable SARS-CoV-2 in NTS samples collected at enrolment (8/13 (62%) vs. 17/17 (100%) P=0.02).
  - SARS-CoV-2 RNA was detected in 20/27 (74%) available saliva; 7/11 (64%) in the asymptomatic and 13/16 (81%) in the symptomatic group (P=0.56)
Dentistry and SARS-CoV-2: What's Unique?

- Close Contact
- Aerosol Generating Procedures (AGPs)
- Engineering Controls
  - Ventilation
  - Operatory design
- SARS-CoV-2: new, still gathering information
- Highest Overall Volume of AGPs
An Infection Control Hierarchy for Dental Professionals
What guidelines are out there?
Hierarchical Approach to Guidance of Safe Practice

Reference: Joint Commission Perspectives September 2019

* For organizations that use Joint Commission accreditation for deemed status purposes or that are required by state regulation or directive, Conditions of Participation (CoPs) and/or Conditions for Coverage (CoCs) should be reviewed for applicable mandatory requirements.
Rules and Regulations

- Occupational Safety and Health Administration
- State Health Department
  - Reference Evidence Based Guidelines (lower tier)
- Local Health Department
- Food and Drug Administration
  - Spaulding Criteria
- Environmental Protection Agency
OSHA "Guidance" : May 1, 2020

- Guidance is not regulation
- Recommendations and mandatory health standards
- Assist employers to provide safe workplace
- Free from recognized hazards likely to cause death or harm

[link to OSHA guidance]

https://www.osha.gov/SLTC/covid-19/dentistry.html
OSHA COVID-19 Dentistry Employees
Who Says Dentistry is "High Risk"?

Dentistry work tasks associated with exposure risk levels

<table>
<thead>
<tr>
<th>Lower (caution)</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Performing administrative duties in non-public areas of dentistry facilities, away from other staff members.</td>
<td>• Providing urgent or emergency dental care, not involving aerosol-generating procedures, to well patients (i.e., to members of the general public who are not known or suspected COVID-19 patients).</td>
<td>• Entering a known or suspected COVID-19 patient's room or care area.</td>
<td>• Performing aerosol-generating procedures on known or suspected COVID-19 patients.</td>
</tr>
<tr>
<td>Note: For activities in the lower (caution) risk category, OSHA's Interim Guidance for Workers and Employers of Workers at Lower Risk of Exposure may be most appropriate.</td>
<td>• Working at busy staff work areas within a dentistry facility.</td>
<td>• Providing emergency dental care, not involving aerosol-generating procedures, to a known or suspected COVID-19 patient.</td>
<td>• Collecting or handling specimens from known or suspected COVID-19 patients.</td>
</tr>
</tbody>
</table>

What about the status of community spread of COVID-19?

https://www.osha.gov/SLTC/covid-19/dentistry.html
ADA: COVID-19 State Mandates & Recommendations
All States are Open for Dentistry

– Status of COVID-19
– Governor/DOH Dentistry Mandates
– Written Order
– State Dental Society
– Dental Board
– Licensure Updates

Guidance on Emergency, Urgent, Elective Procedures

Emergency Procedure Definitions in State Orders and Directives

- **Arizona**
  - State Medical Officer Order: "Emergency medical condition is defined as a medical condition manifesting itself by acute symptoms of sufficient severity (including severe pain, psychiatric disturbances, and/or symptoms of substance abuse) such that the absence of immediate medical attention could reasonably be expected by a person's licensed medical provider to result in placing the health of the person in serious jeopardy or causing serious impairment to bodily functions or serious dysfunction of bodily organs."
  - Board of Dental Examiners guidance: Urgent care includes any patient needs that are urgent, such as:
    - Dental pain (including chronic ulcerative mucosal disease management)
    - Swelling of gums, face or neck
    - Signs of infection, such as a draining site
    - Trauma to face, jaw, teeth, including fractures
    - Pre- and post-transplant, radiation or bisphosphonate patients with oral symptoms (evaluate by telephone screening first)
    - Pre-transplant evaluations
    - Referrals made by physicians or other healthcare providers
    - Potential malignancy
    - Broken tooth
    - Ill-fitting denture
    - Final crown/bridge cementation if the temporary restoration has broken, is lost or is causing gingival irritation

- **Alaska**
  - From Executive Order: "Defined by the ADA as ‘health care related to relief of severe dental/oral pain and infection management.’"
  - Arizona State Board of Dental Examiners references the ADA’s “What Constitutes a Dental Emergency?”

https://success.ada.org/~/media/CPS/Files/Open%20Files/ADA_COVID19_Dental_Emergency_DDS.pdf
State Clarifying Guidance: Aligned with EBG & Professional Organizations

- Emergency vs. Elective
- AAOMS Guide
  - State by State
  - Timelines
  - Urgent, Non-Urgent
  - Symptoms
  - Presence of Disease
- ADA Guide
  - Emergency
  - Urgent
  - Routine
  - Non-Urgent
State Clarifying Guidance: Aligned with EBG & Professional Organizations

Seek guidance from the State Dental Board & Local Dental Society
CoPs and CfCs

- Mar 18, 2020: CMS Releases Recommendations on Adult Elective Surgeries, Non-Essential Medical, Surgical, and Dental Procedures During COVID-19 Response
- Apr 19, 2020: CMS issues recommendation to Re-Open Health Care Systems in Areas with Low Incidence of COVID-19

Clarifying Guidance

- CoPs and CfCs apply to hospitals with deemed status
- Not applicable to dentistry
- Some accreditation standards MAY stem from CoPs and CfCs
- May impact accredited dental practices
Manufacturers’ Instructions for Use (IFU)
Take Another Look
- Reviewed and approved by FDA
- Often overlooked or not included in clinic policy
- Always follow the IFU
- COVID-19
  - Coronavirus easily killed by most disinfectants
  - EPA disinfectants for COVID-19
    https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2-covid-19
    - Variability between products
    - Contact time

Staff and clinical safety depend on compliance with IFU!
Evidence Based Guidelines and National Standards

- CDC Guidance
  - Infection Control Dental (2003)
  - Basic Expectations for Safe Care (2016)
  - CDC Guidance Sterilization (2008)

- COVID-19:
  - Interim Guidance for Dental Settings
    - Updated June 17, 2020
Consensus Documents & Resources
Updated Often, Check for New Releases

- American Dental Association
  - Return to Work Toolkit June 9, 2020
  - Aligned with CDC
- Academy of General Dentistry COVID-19 Resources
  - Return to Work Guidance June 15, 2020
  - Regulatory Resources (Uses Hierarchy)
- American Academy of Periodontology
  - Webinar Series
- American Society of Dental Anesthesiologists
  - https://old.asdahq.org/content/covid-19-pandemic
- American Dental Hygienists Association
  - Task Force on Return to Work
  - https://www.adha.org/covid19
- OSAP
  - Up to date links to consensus documents from all relevant organizations
  - https://www.osap.org/page/COVID-19
Policies and Procedures

- Organizational Guidelines
  - Recovery Plan
  - Preventive Protocols
  - Team Guidance
- Clinical / Departmental Guidelines
  - Clinical Safety Guide
  - Scheduling
  - Clinical Treatment Techniques/Modifications
- Employee Manual
  - Protocols
  - Policies
  - Procedures
Strategies to Eliminate Risk
Strategies to Stop Transmission

https://www.cdc.gov/niosh/topics/hierarchy/default.html
Hierarchy of Controls: Defined

**Elimination:**
Physically remove the hazard
- Pre-appointment screening prior to and upon arrival

**Substitution:**
Replace a high risk procedures with a lower risk procedures
- Hand scale for dental cleanings
- Teledentistry

**Administrative Controls:**
Policy and Procedures
- Temperature checks
- Training/education/competency
– Operate HVAC in fan mode

– HVAC filter: Consider upgrading the filtration at the HVAC unit to MERV 13 or MERV 14 if possible.
Evaluate whether dental vacuum can operate in continuous suction.

Utilize portable HEPA unit.
- The HVAC supply is oriented towards the entrance of the room

- The return is at the rear of the room

- The HEPA filter is at the rear of the room

Graphic Modified from CDC/NIOSH
Hierarchy of Controls - Engineering

- Portable room dividers
- Adjustable heights available
Personal Protective Equipment: PPE

Increased Demand
- COVID-19 patients
- Aerosol generating procedures
- Additional users of PPE

Limited Resources
- Dwindling stock
- Limited supplies/suppliers
PPE Burn Rate Calculator

- The rate of supply use depends on multiple factors including
  - Number of patients
  - Number of staff
  - Processes organizations put in place to conserve supplies
  - Increases in production and distribution

CDC: Personal Protective Equipment Optimization Strategy

Conventional Capacity
- Standard practices

Contingency Capacity
- Engineering controls
- Cancel elective procedures
- Reserve PPE for HCP
- Reusable PPE
- Beyond shelf life: training
- Modifications to standard practices

Seek Assistance from Public Health

Crisis Capacity
- Beyond shelf-life-patient care
- Prioritize PPE
- Consider alternatives
- Not necessarily aligned with standard practices

Seek Assistance from Public Health

Extended Use: Masks and Respirators

What does it mean?

- Using same mask or respirator
- Between patients
- Without removing mask/respirator

How do I operationalize?

- Consult with IP and HD.
- Train/education staff.

What precautions do I need to address?

- Discard mask if soiled, damaged or difficult to breathe.
- Hand hygiene after adjustment.
- Leave care area if remove mask
Limited Re-Use: Mask and Respirator

What Does it mean?

- Same mask/respirator
- Multiple encounters with different patients
- Remove after each encounter

How do I operationalize?

- Assumptions to consider prior to implementing

What precautions do I need to take?

- Remove and discard if soiled, damaged or difficult to breathe
- Follow IFU for number of reuses
- Store to protect from contamination
- Identify staff member on storage
Example: Proper Donning Re-usable N95

- Hand hygiene
- Don gown (if applicable) and gloves
- Remove mask from storage container: check integrity
- Don mask/N95: Seal test (N95)
- Remove gloves, hand hygiene
- Don new gloves
- Don eye protection/face shield
Example: Proper Doffing Re-usable Respirator

- Remove gloves and gown (if applicable)
- Hand Hygiene
  - don gloves
- Remove and clean eye protection
- Remove gloves
  - Hand hygiene
- Remove mask/ N95
  - Hand hygiene
- Place supplies in designated storage
Dentistry Specific Face Shield: Protect the N95!

- Mask over N95
- Faceshield over N95: Accommodates the use of light and loupes
- Facilitates droplet protection of N95 mask during AGP allowing for extended use or reprocessing
- Follow Manufacturer’s IFU to clean or dispose of shield after each use

NIOSH Blog [https://blogs.cdc.gov/niosh-science-blog/2020/06/16/covering-n95s/]
Decontamination and Reuse of Filtering Facepiece Respirators using Contingency and Crisis Capacity Strategies

Disposable filtering facepiece respirators (FFRs) are not approved for routine decontamination and reuse as standard of care. However, FFR decontamination and reuse may need to be considered as a crisis capacity strategy to ensure continued availability. Based on the limited research available, ultraviolet germicidal irradiation, vaporous hydrogen peroxide, and moist heat showed the most promise as potential methods to decontaminate FFRs. This document summarizes research about decontamination of FFRs before reuse.

**N95 Respiratory Reprocessing**
- Filtration performance
- Retain fit characteristics
- Maintain safety for wearer

**Acceptable Strategy**
- Crisis respiratory capacity
- Not suitable respirators for AGPs

**Consult manufacturer**
- Ultraviolet germicidal irradiation
- Vaporous hydrogen peroxide
- Moist heat

# Types of Air-Purifying Respirators

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Filtering Facepiece Respirator (N95 or higher mask) | Disposable  
Covers nose and mouth  
Filters air particles  
Fit testing required |
| Elastomeric Half/Full Facepiece Respirator | Reusable device  
Requires cartridges or filter  
Requires fit testing  
May be disinfected  
Full provides eye protection |
| Powered Air-Purifying Respirator (PAPR)    | Reusable device  
Battery operated  
Provides eye protection  
Loose-fitting (no fit testing)  
Tight-fitting (requires fit testing) |

[https://www.cdc.gov/niosh/npptl/images/infographics/FY17N95infographicWhatAre.jpg](https://www.cdc.gov/niosh/npptl/images/infographics/FY17N95infographicWhatAre.jpg)
## OSHA Guidance Well vs COVID-19 Patients

### Establishing a Respiratory Protection Program

<table>
<thead>
<tr>
<th>Well patients</th>
<th>Dental procedures not involving aerosol-generating procedures</th>
<th>Dental procedures that may or are known to generate aerosols</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Work clothing, such as scrubs, lab coat, and/or smock, or a gown</td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td>Gloves</td>
<td>Gown</td>
</tr>
<tr>
<td></td>
<td>Eye protection (e.g., goggles, face shield)</td>
<td>Eye protection (e.g., goggles, face shield)</td>
</tr>
<tr>
<td></td>
<td>Face mask (e.g., surgical mask)</td>
<td>NIOSH-certified, disposable N95 filtering facepiece respirator or better*</td>
</tr>
</tbody>
</table>

## OSHA Guidance Well vs COVID-19 Patients

### Establishing a Respiratory Protection Program

<table>
<thead>
<tr>
<th>Patients with suspected or confirmed COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dental procedures not involving aerosol-generating procedures</strong></td>
</tr>
<tr>
<td>- Gloves</td>
</tr>
<tr>
<td>- Gown</td>
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# PPE Selection: Risk = Resources Needed

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</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Any level</td>
<td>FFR, face/eye protection, gloves, gown</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>FFR or mask, face/eye protection, gown, gloves</td>
</tr>
<tr>
<td>No/Unknown</td>
<td>Yes</td>
<td>Any level</td>
<td>FFR and face/eye protection, gown, gloves</td>
</tr>
<tr>
<td>No/Unknown</td>
<td>No</td>
<td>Moderate or Substantial</td>
<td>Mask and eye protection *</td>
</tr>
<tr>
<td>No/Unknown</td>
<td>No</td>
<td>Minimal or Limited</td>
<td>Mask or cloth covering (source control) *</td>
</tr>
</tbody>
</table>

* Additional PPE as required by Standard and Transmission based Precautions

**FFR:** Filtering Facepiece Respirator
Patient Flow: Applying Risk Mitigation Strategies
Prior to Patient Arrival

- Pre-appointment contact
- Triage dental needs
- Health Screening
- Advise patients about new protocols
- Visitor limitations
- Spacing out appointments
- Arrival process
- Request face covering
- Stay home if sick
Facility Considerations

− Limit and monitor points of entry
− Prepare waiting and clinic areas
− Post signage
− Provide supplies for respiratory hygiene and cough etiquette
− Is the air flow optimized and/or HEPA filter in use
− Dental chairs 6 feet apart and physical separation
− Have waterlines been tested & maintained
Upon Patient Arrival

- Assess all patients
  - Fever, cough, shortness of breath?
  - Take temperature
  - Face covering
  - Waiting in appropriate area

- If COVID-19 Symptoms (+)
  - Make sure patient is masked
  - Send home, ER, or 911
Providing Care

- One patient at a time when possible
- Limited staff present
- Masks on all staff
- Adequate supplies available in the operatory
- Avoid AGPs, if possible
- During AGPs:
  - 4-handed dentistry
  - 4-handed hygiene
  - High evacuation suction
  - Dental dams
After Dental Treatment

- Advise patient to inform the facility if they become ill with respiratory or COVID-19 symptoms within 48 hours

- Proper handling of PPE
After Dental Treatment

- Remove and replace any barrier protection
- Disinfection products must be on the EPA N list
- Clean and disinfect the room and equipment according to the CDC Guidelines for Infection Control in Dental Health-Care Settings—2003
Summary

- Infection Prevention Hierarchy
- OSHA/CDC Hierarchy of Controls
- PPE strategies
- Follow a methodical step by step approach for addressing risk to staff and patients

Questions?

- Use the Standards Interpretation Site

https://web.jointcommission.org/sigsubmission/sigquestionform.aspx