



Respiratory Protection Update
for the Continuing COVID-19
Pandemic

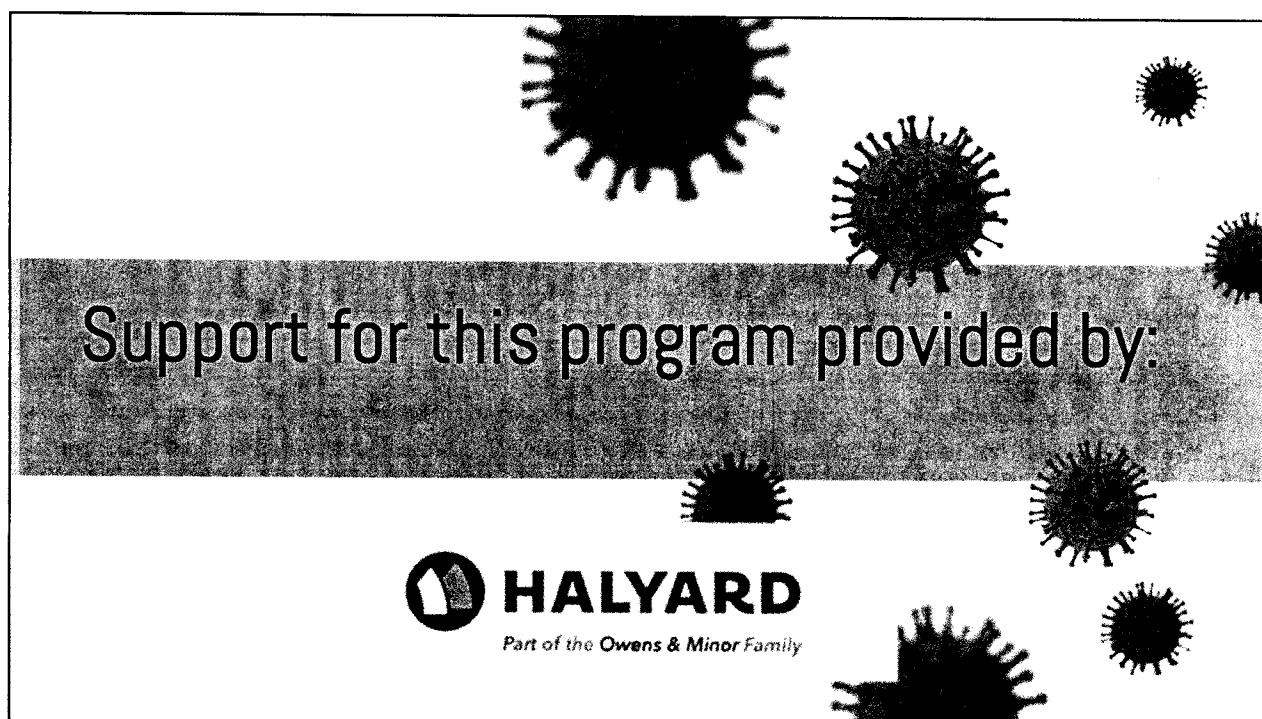
Mary Govoni, MBA, CDA, RDH

 VIVA LEARNING™




The slide features a white background with several black, spiky virus-like icons scattered across it. A horizontal grey band with a fine, grainy texture spans the middle of the slide, containing the title text. Below this band, the presenter's name is listed. The VIVA LEARNING logo consists of a stylized 'V' inside a circle followed by the company name. A circular inset on the right side contains a black and white portrait of Mary Govoni.

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Support for this program provided by:

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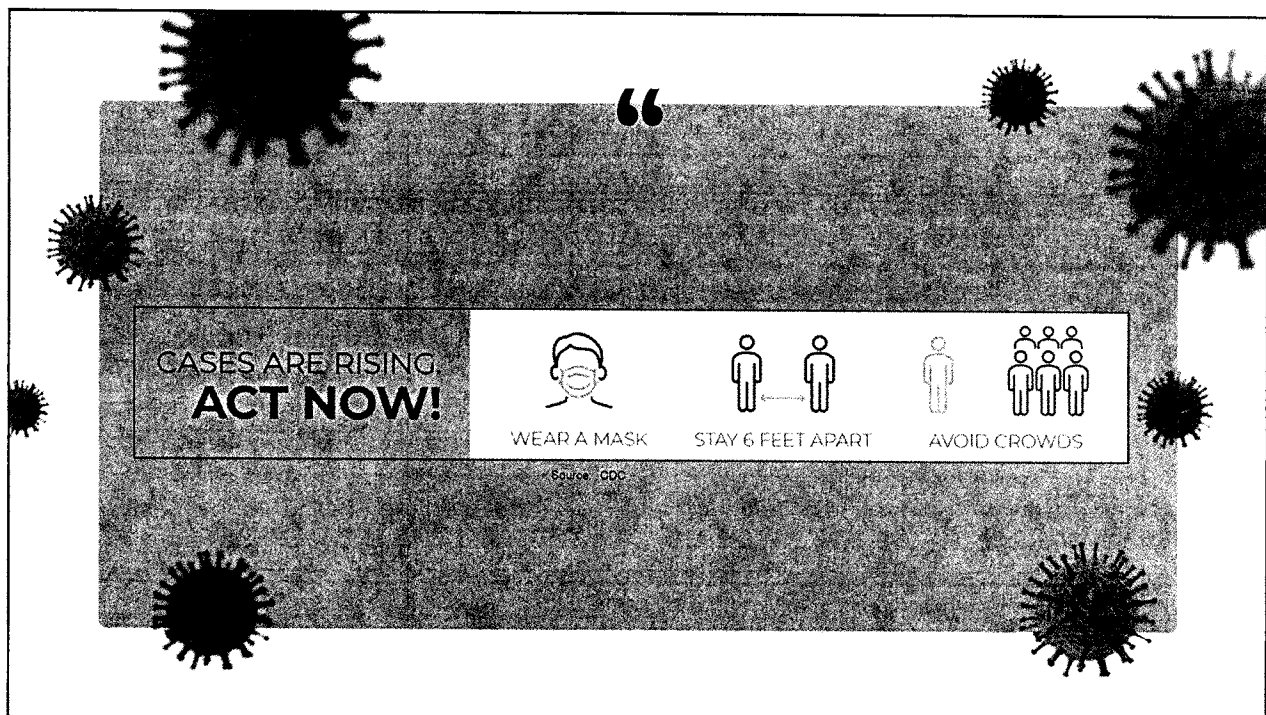
The slide has a white background with black virus-like icons. A horizontal grey band with a fine, grainy texture spans the middle of the slide, containing the text 'Support for this program provided by:'. Below this band, the HALYARD logo is displayed, featuring a stylized 'H' inside a circle. The text 'Part of the Owens & Minor Family' is written in a smaller font below the company name.

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Course Objectives

- Discuss why the COVID-19 pandemic and wearing of respirators is still a concern for dentistry
- Compare surgical masks and N95 respirators
- Review of the regulatory requirements surrounding respiratory protection in dentistry – including documentation
- Explain how to make fit-testing of respirators convenient and cost-effective

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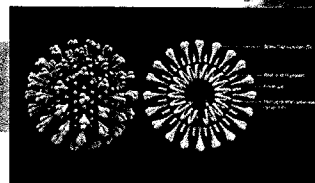
Why are we still talking about respiratory protection???

- ▶ Pandemic is not over – cases still surging
 - ▶ In most states
- ▶ New strains/variants
 - ▶ Super strains - >50% more contagious
 - ▶ 4 strains identified as of 1-20-21



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Variants of COVID-19



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<https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant.html>

<https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/scientific-brief-emerging-variants.html>

<https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant-cases.html>

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Why are we still talking about respiratory protection???

What implications could the emergence of new variants have?

Among the potential consequences of these mutations are the following:

- *Ability to spread more quickly in humans.* There is already evidence that one mutation, D614G, has this property to spread more quickly. In the lab, G614 variants propagate more quickly in human respiratory epithelial cells, out-competing D614 viruses. There also is evidence that the G614 variant spreads more quickly than viruses without the mutation.
- *Ability to cause either milder or more severe disease in humans.* There is no evidence that VOC 202012/01 produces more severe illness than other SARS-CoV-2 variants.
- *Ability to evade detection by specific diagnostic tests.* Most commercial polymerase chain reaction (PCR) tests have multiple targets to detect the virus, such that even if a mutation impacts one of the targets, the other PCR targets will still work.
- *Decreased susceptibility to therapeutic agents such as monoclonal antibodies.*
- *Ability to evade vaccine-induced immunity.* FDA-authorized vaccines are "polyclonal," producing antibodies that target several parts of the spike protein. The virus would likely need to accumulate multiple mutations in the spike protein to evade immunity induced by vaccines or by natural infection.

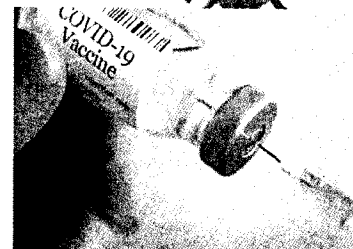
Among these possibilities, the last—the ability to evade vaccine-induced immunity—would likely be the most concerning because once a large proportion of the population is vaccinated, there will be immune pressure that could favor and accelerate emergence of such variants by selecting for "escape mutants." There is no evidence that this is occurring, and most experts believe escape mutants are unlikely to emerge because of the nature of the virus.

**Interim: Implications of the
Emerging SARS-CoV-2 Variant
VOC 202012/01 | CDC**

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Why are we still talking about respiratory protection???

- Getting people vaccinated takes time
 - DHCP given priority
 - General public may take > a year
- Vaccine does not guarantee immunity
 - If COVID-19 contracted most likely less serious
 - How long immunity lasts is still unknown
 - Vaccine acceptance is not universal

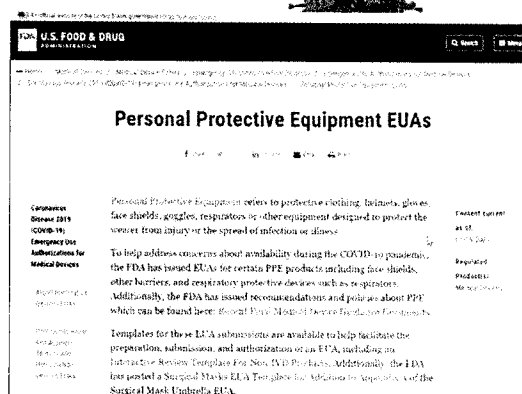


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Why are we still talking about respiratory protection???

- ▶ Issues with supplies early in the pandemic has caused confusion
 - ▶ FDA Emergency Use Authorization (EUA)
 - ▶ Allowed for use of KN95 respirators – not NIOSH certified
 - ▶ Also allows for use of non-FDA cleared N95's
 - ▶ CDC guidance allowed for the use of ASTM Level 3 masks with full face shield
- ▶ Personal Protective Equipment EUAs | FDA



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Why are we still talking about respiratory protection???

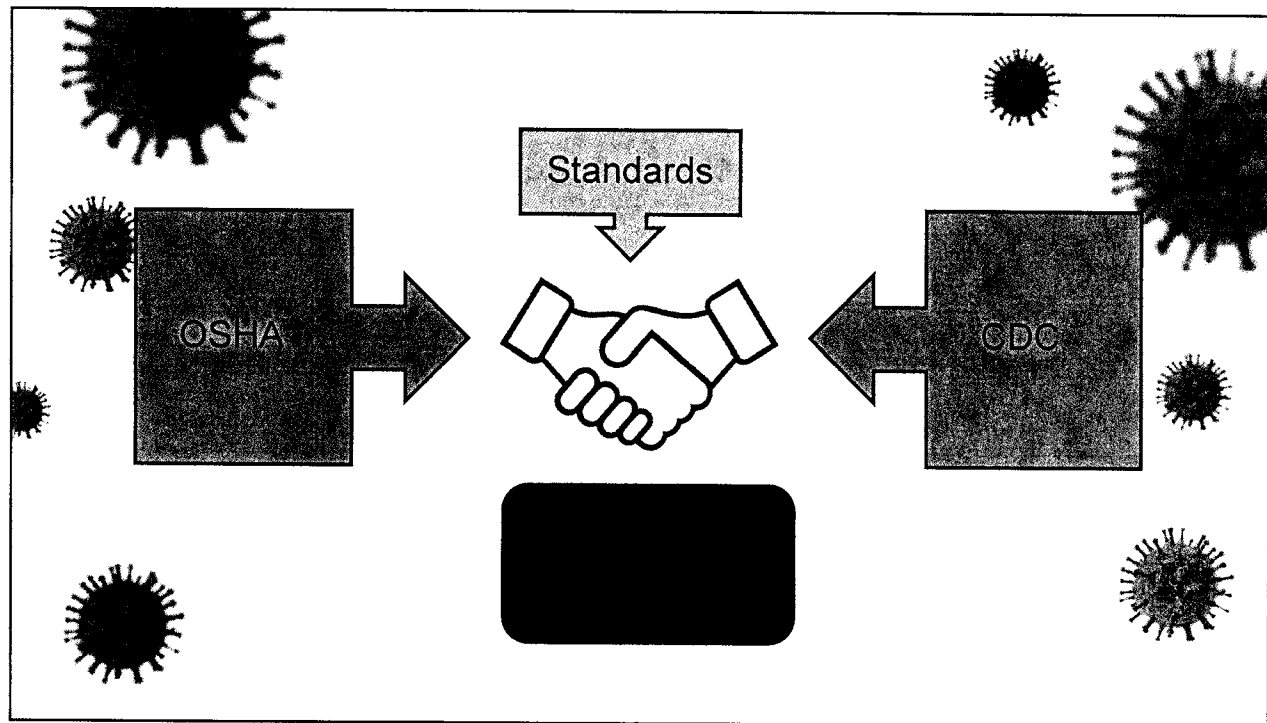
- ▶ These only apply when FDA-cleared N95's not available
 - ▶ *If N95's not available, no emergency tx for patients with symptoms or who have COVID-19*
- ▶ Infection Control: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | CDC
- ▶ *Must document attempts to procure N95's*

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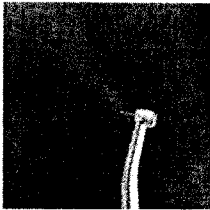

Why are we still talking about respiratory protection???

- ▶ **Conflicting information from dental organizations vs. regulatory authorities**
 - ▶ N95 respirators *are required* by OSHA for AGP's
 - ▶ Fit testing for respirators *is required* by OSHA
 - ▶ OSHA citations from inspections in dental practices
 - ▶ [Establishment Search Results Page | Occupational Safety and Health Administration \(osha.gov\)](https://www.osha-slc.gov/EstablishmentSearchResultsPage)



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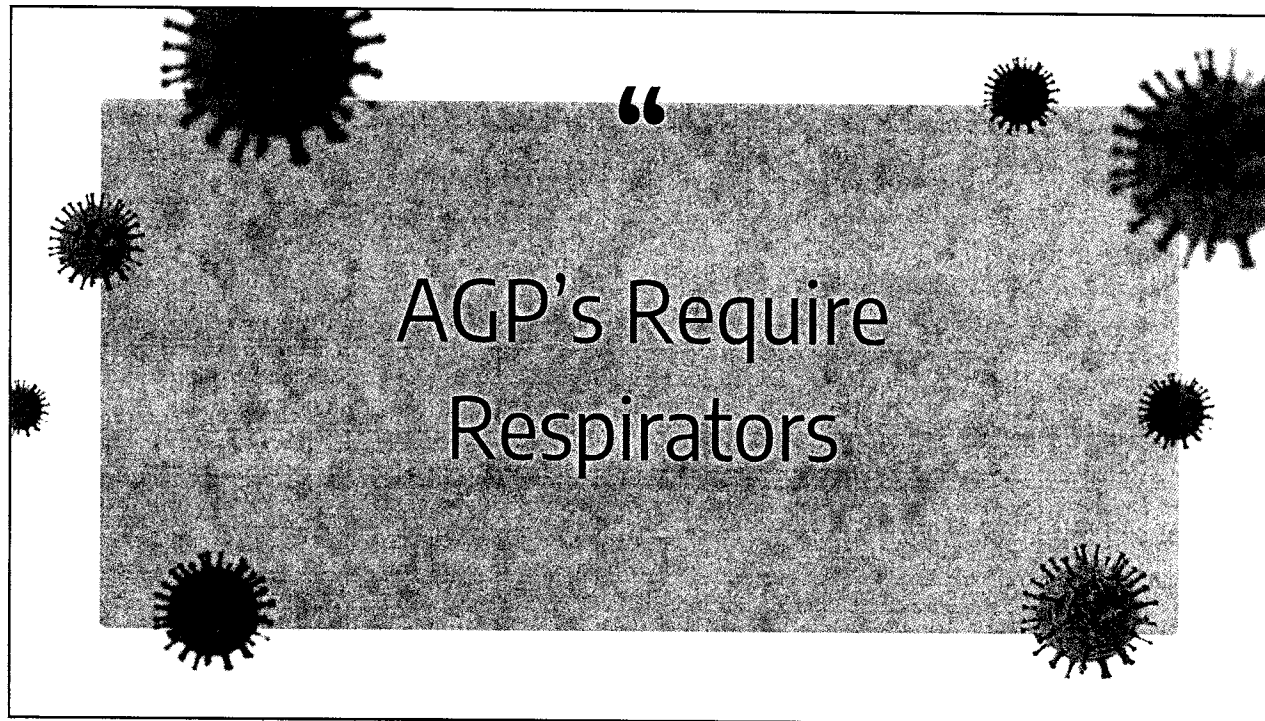
Aerosol Generating Procedures AGP's

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UNITED STATES DEPARTMENT OF LABOR
OSHA

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English Español

COVID-19 - Control and Prevention / Dental Workers and Employers

Dentistry Workers and Employers

This section provides guidance for dentistry workers and employers. This guidance supplements the general advice published for workers and employers of workers at increased risk of occupational exposure to SARS-CoV-2.

On March 26, 2020, the American Dental Association called for dentists to keep their offices closed to all but urgent and emergency procedures during the COVID-19 outbreak. Under emergency dental procedures, dentists cannot be held liable. OSHA follows emergency law emergency dental procedures for patients with suspected or confirmed COVID-19 and appropriate procedures, including personal protective equipment (PPE), are available and used.

Dentistry employers should remain alert of changing outbreak conditions, including to this risk to determine extent of the virus and testing availability, and implement whether prevention measures accordingly. In states or regions which the setting allows to progress through the phases of the guidance for Opening up America Again, employers will likely be able to adjust this guidance to better suit working risk levels and necessary control measures in their workplaces.

Employers should assess the health of each staff member who may be required, evaluate the risk of exposure, and select, implement, and ensure workers use suitable to prevent exposure. The table below describes dentistry work tasks associated with the exposure risk levels to SARS-CoV-2 exposure risk levels, which may serve as a guide to employers in this sector.

Dentistry work tasks associated with exposure risk levels

Low risk	Medium risk	High risk	Very high risk
<ul style="list-style-type: none"> Performing administrative duties in non-patient areas of dentistry facilities, away from other staff members. <p>Note: For additional information, see OSHA's Interim Guidance for employers and employees of Health or Long-term Care facilities for more information.</p>	<ul style="list-style-type: none"> Providing urgent or emergency dental care, but excluding aerosol-generating procedures, to staff patients (i.e., in members of the general public who are not known or suspected COVID-19 patients). Working in close staff work areas within a dentistry facility. 	<ul style="list-style-type: none"> Performing aerosol-generating procedures on suspected COVID-19 patients or staff. Performing emergency dental care, but excluding aerosol-generating procedures, to a known or suspected COVID-19 patient. Performing aerosol-generating procedures on staff patients. 	<ul style="list-style-type: none"> Performing aerosol-generating procedures on known or suspected COVID-19 patients. Collecting or handling specimens from known or suspected COVID-19 patients.

While more is known about how COVID-19 spreads, OSHA recommends using a combination of standard precautions, medical precautions, and contact precautions, including but not limited to (e.g., gloves or face shields), to protect dentistry workers performing patient care. But this does not include aerosol-generating procedures on individuals without suspected or confirmed COVID-19. In emergency situations where medical care requires to be provided to confirmed COVID-19 patients, and systems when performing aerosol-generating procedures, use standard precautions, contact precautions, airborne precautions, and eye protection (e.g., goggles or face shields) to protect dentistry workers.

The dentistry using dental facilities, such as dental hospitals, urgent care, and at-home symptoms are examples of tasks that generate aerosols. This is not exhaustive; other procedures also may generate aerosols.

The CDC provides the most updated infection prevention and control recommendations for emergency dental procedures during the COVID-19 pandemic. Dentistry workers are responsible for following applicable OSHA requirements, including OSHA's [Dentistry Regulations](#) (29 CFR 1910.133), [Powered Industrial Equipment](#) (29 CFR 1910.132), and [Respiratory Protection](#) (29 CFR 1910.134) standards. See the [Standards page](#) for additional information on OSHA's [enforcement](#).

For additional information on OSHA's [enforcement](#), visit [www.osha.gov/enforcement](#) or call 1-800-321-OSHA (6742). Visit the [OSHA website](#) for more information on OSHA's [enforcement](#).

COVID-19 Guidance for Dental Practitioners

OSHA is committed to protecting the health and safety of America's workers and workplaces during these unprecedented times. The agency will be issuing a series of industry-specific alerts designed to help keep workers safe.

If you are a dental practitioner, the following tips can help reduce the risk of exposure to the coronavirus:

- Encourage workers to stay home if sick.
- Maximize use of telemedicine for non-emergency consultations, and prioritize urgent and emergency procedures.
- Install physical barriers or partitions between patient treatment areas.
- Provide adequate ventilation and airflow in patient treatment areas so that air moves away from staff work areas.
- Frequently clean and disinfect surfaces and equipment with hospital-grade Environmental Protection Agency-approved cleaning chemicals from lists that have label claims against the coronavirus.
- Minimize the number of staff present when aerosol-generating procedures are performed, and ensure staff who are present are appropriately protected.
- Provide appropriate personal protective equipment, such as eye goggles, face shields, and N95 respirators, as necessary to protect dental practitioners and support personnel.
- Encourage workers to report any safety and health concerns.

For more information, visit [www.osha.gov/coronavirus](#) or call 1-800-321-OSHA (6742). Visit the [OSHA website](#) for more detailed guidance for dental industry workers.

OSHA issues alerts to draw attention to worker safety and health issues and solutions.

OSHA • [osha.gov/coronavirus](#) • 1-800-321-OSHA (6742) • [@OSHA_DOI](#)

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OSHA Regulations – Interim Guidance

Dentistry work tasks associated with exposure risk levels

Lower (caution)	Medium	High	Very High
<ul style="list-style-type: none"> Performing administrative duties in non-public areas of dentistry facilities, away from other staff members. <p>Note: For activities in the lower (caution) risk category, OSHA's <i>Interim Guidance for Workers and Employers of Workers at Lower Risk of Exposure</i> may be most appropriate.</p>	<ul style="list-style-type: none"> 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). Working at busy staff work areas within a dentistry facility. 	<ul style="list-style-type: none"> Entering a known or suspected COVID-19 patient's room or care area. Providing emergency dental care, not involving aerosol-generating procedures, to a known or suspected COVID-19 patient. Performing aerosol-generating procedures on well patients. 	<ul style="list-style-type: none"> Performing aerosol-generating procedures on known or suspected COVID-19 patients. Collecting or handling specimens from known or suspected COVID-19 patients.

[COVID-19 - Control and Prevention | Dentistry Workers and Employers | Occupational Safety and Health Administration \(osha.gov\)](#)

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OSHA Regulations – Interim Guidance

Personal Protective Equipment

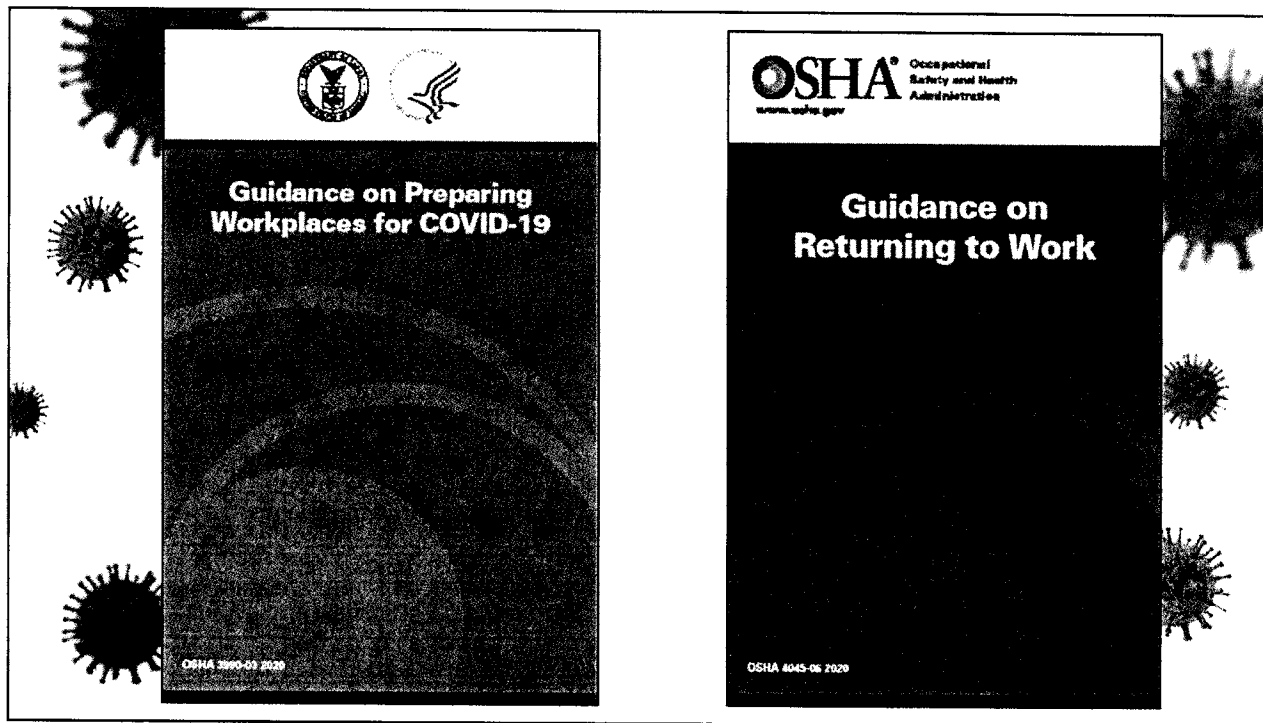
Dentistry workers must use proper PPE when exposed to patients. PPE differs for the care of well patient care during the COVID-19 pandemic versus PPE needed when providing emergency care to a patient with suspected or confirmed COVID-19 (See OSHA's PPE standards at 29 CFR 1910 Subpart I).

OSHA recommends the following PPE for dentistry during the COVID-19 pandemic:

Well patients		Patients with suspected or confirmed COVID-19	
Dental procedures not involving aerosol-generating procedures	Dental procedures that may or are known to generate aerosols	Dental procedures not involving aerosol-generating procedures	Dental procedures that may or are known to generate aerosols
<ul style="list-style-type: none"> Work clothing, such as scrubs, lab coat, and/or smock, or a gown Gloves Eye protection (e.g., goggles, face shield) Face mask (e.g., surgical mask) 	<ul style="list-style-type: none"> Gloves Gown Eye protection (e.g., goggles, face shield) NIOSH-certified, disposable N95 filtering facepiece respirator or better* 	<ul style="list-style-type: none"> Gloves Gown Eye protection (e.g., goggles, face shield) NIOSH-certified, disposable N95 filtering facepiece respirator or better* 	<ul style="list-style-type: none"> Gloves Gown Eye protection (e.g., goggles, face shield) NIOSH-certified, disposable N95 filtering facepiece respirator or better*

[COVID-19 - Control and Prevention | Dentistry Workers and Employers | Occupational Safety and Health Administration \(osha.gov\)](#)

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OSHA Resource Links

[COVID-19 - Control and Prevention - Dentistry Workers and Employers | Occupational Safety and Health Administration \(osha.gov\)](#)

[COVID-19 Guidance for Dental Practitioners \(osha.gov\)](#)

[Guidance on Preparing Workplaces for COVID-19 \(osha.gov\)](#)

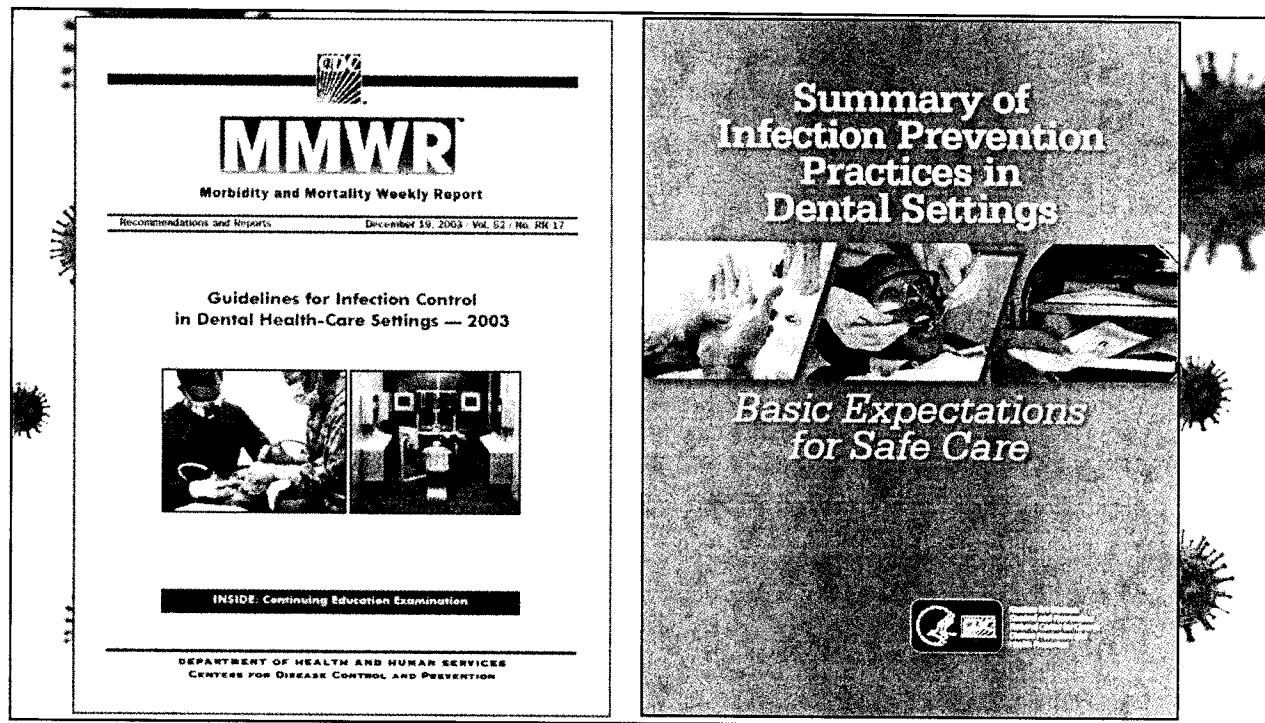
[Guidance on Returning to Work \(osha.gov\)](#)

[Bloodborne Pathogens - Standards | Occupational Safety and Health Administration \(osha.gov\)](#)

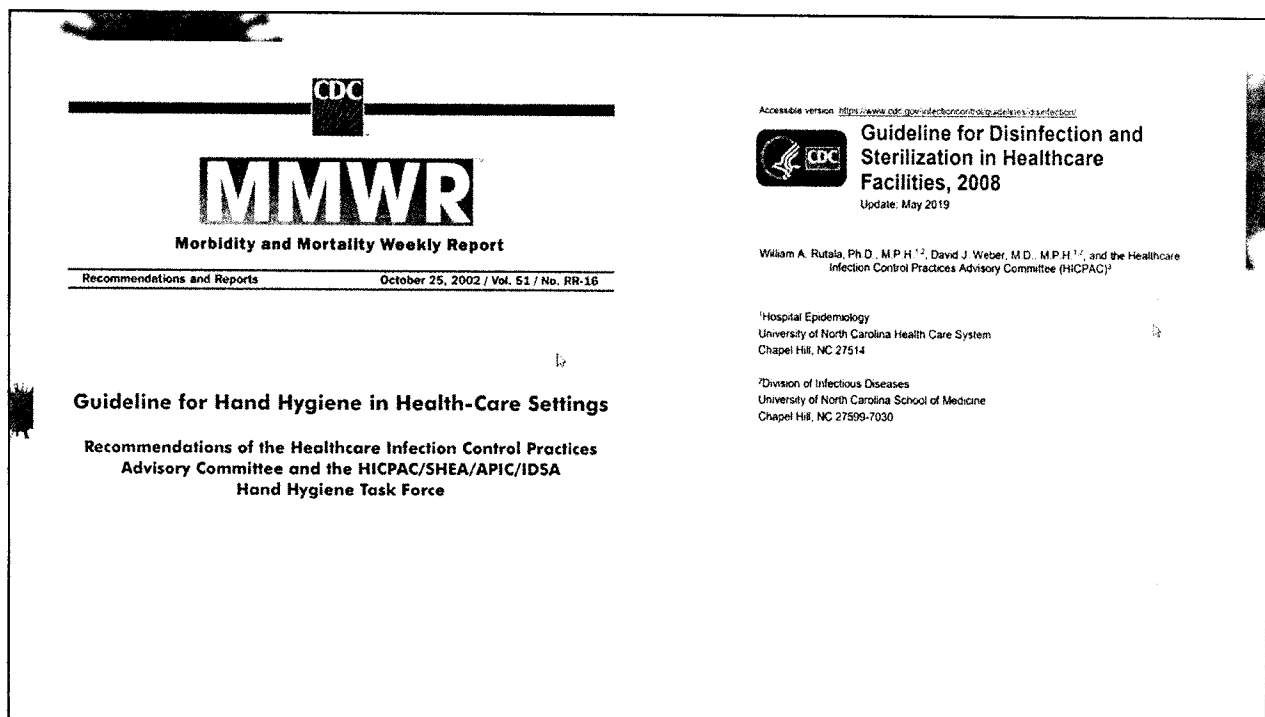
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OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

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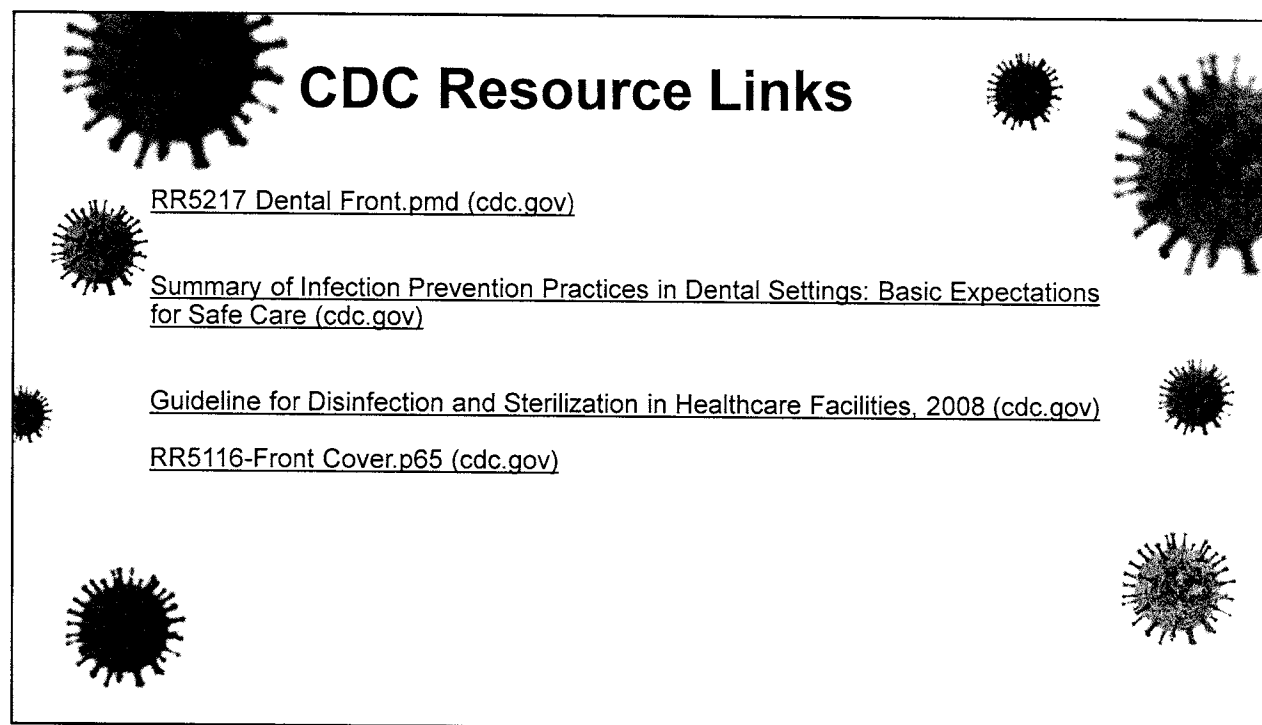
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CDC Resource Links

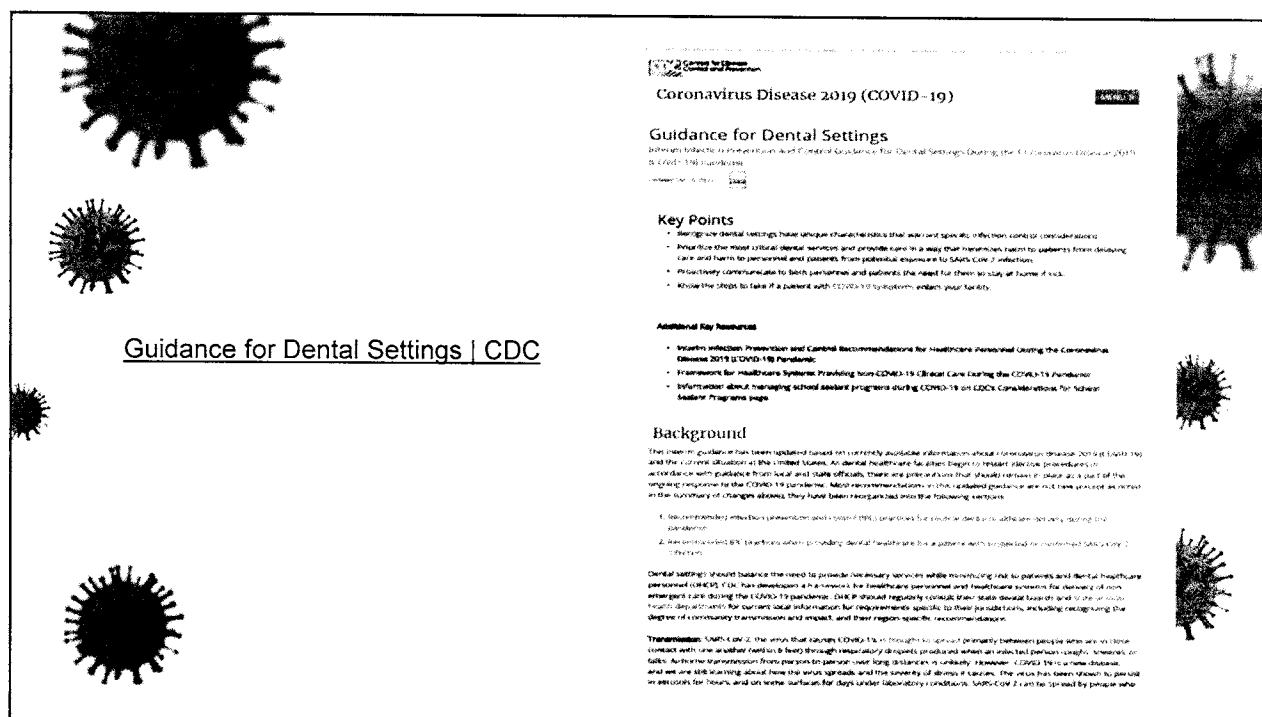
[RR5217 Dental Front.pmd \(cdc.gov\)](#)

[Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care \(cdc.gov\)](#)

[Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008 \(cdc.gov\)](#)

[RR5116-Front Cover.p65 \(cdc.gov\)](#)

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Coronavirus Disease 2019 (COVID-19)

Guidance for Dental Settings

Interim Infection Prevention and Control Guidance for Dental Settings During the COVID-19 Pandemic

Updated: March 11, 2020

Key Points

- Recognize dental settings have unique characteristics that warrant specific infection control considerations.
- Provide the most critical dental services and provide care in a way that minimizes harm to patients from delaying care and harm to personnel and patients from potential exposure to SARS-CoV-2 infection.
- Proactively communicate to both personnel and patients the need for them to stay at home if sick.
- Know the steps to take if a patient with COVID-19 symptoms enters your facility.

Additional Key Resources

- Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic
- Framework for Healthcare Systems: Preparing for COVID-19 Clinical Care During the COVID-19 Pandemic
- Information about managing school reentry programs during COVID-19 on CDC's Considerations for School Reentry Programs page

Background

This interim guidance has been updated based on currently available information about coronavirus disease 2019 (COVID-19) and the current situation in the United States. As dental healthcare facilities begin to resume select procedures in accordance with guidance from local and state officials, there are precautions that should be taken in place as a part of the ongoing response to the COVID-19 pandemic. Most recommendations in this updated guidance are not new, but are included in the summary of changes below; they have been reorganized into the following sections:

- Recommendations for personnel and a special PPE chapter for people working in dental settings during the pandemic.
- Recommendations for practices when providing dental healthcare to a patient with suspected or confirmed SARS-CoV-2 infection.

Dental settings should balance the need to provide necessary services while minimizing risk to patients and dental healthcare personnel (DHCP). CDC has developed a framework for healthcare personnel and healthcare systems for delivery of non-emergent care during the COVID-19 pandemic. This is shared regularly consult state dental boards and to the public health departments for current local information for requirements specific to their jurisdictions, including recognizing the degree of community transmission and impact, and their region-specific recommendations.

Transmission: SARS-CoV-2, the virus that causes COVID-19, is thought to spread primarily between people who are in close contact with one another (coughs & sneezes) through respiratory droplets produced when an infected person coughs, sneezes, or talks. Another transmission from person to person using fomites is unlikely. However, COVID-19 is a new disease, and we are still learning about how the virus spreads, and the severity of illness it causes. The virus has been shown to persist on surfaces for hours and on some surfaces for days under laboratory conditions. SARS-CoV-2 can be spread by people who

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Universal Source Control



Source: Microsoft Creative Commons



Source: Microsoft Creative Commons

► DHCP should wear face mask **at all times** while they are in a dental setting.

- Meetings/training
- Break room – when not eating

► When doctors, hygienists, dental assistants are not engaged in direct patient care activities, they can take off their respirator and switch to a surgical mask or cloth face mask

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PPE for Non-AGP's

► During procedures likely to generate splashing or spattering of blood or other body fluids - non-aerosol generating:

► no handpiece, air/water syringe or ultrasonic scaler

- Surgical mask – ASTM Level 3
- Eye protection
 - Goggles, protective eyewear with solid side shields or a full-face shield
- Gown or protective clothing
- Gloves

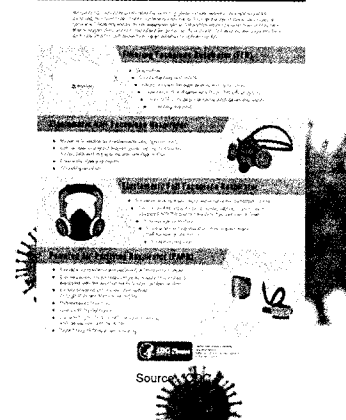
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PPE for AGP's

▶ During AGP's conducted on patients assumed to be non-contagious, consider the use of an N95 respirator or a respirator that offers a higher level of protection, such as:

- ▶ Disposable filtering facepiece respirators
- ▶ Elastomeric respirators
 - ▶ Half facepiece
 - ▶ Full facepiece
- ▶ PAPR
- ▶ Gowns, gloves, goggles/face shields

What are Air-Purifying Respirators?



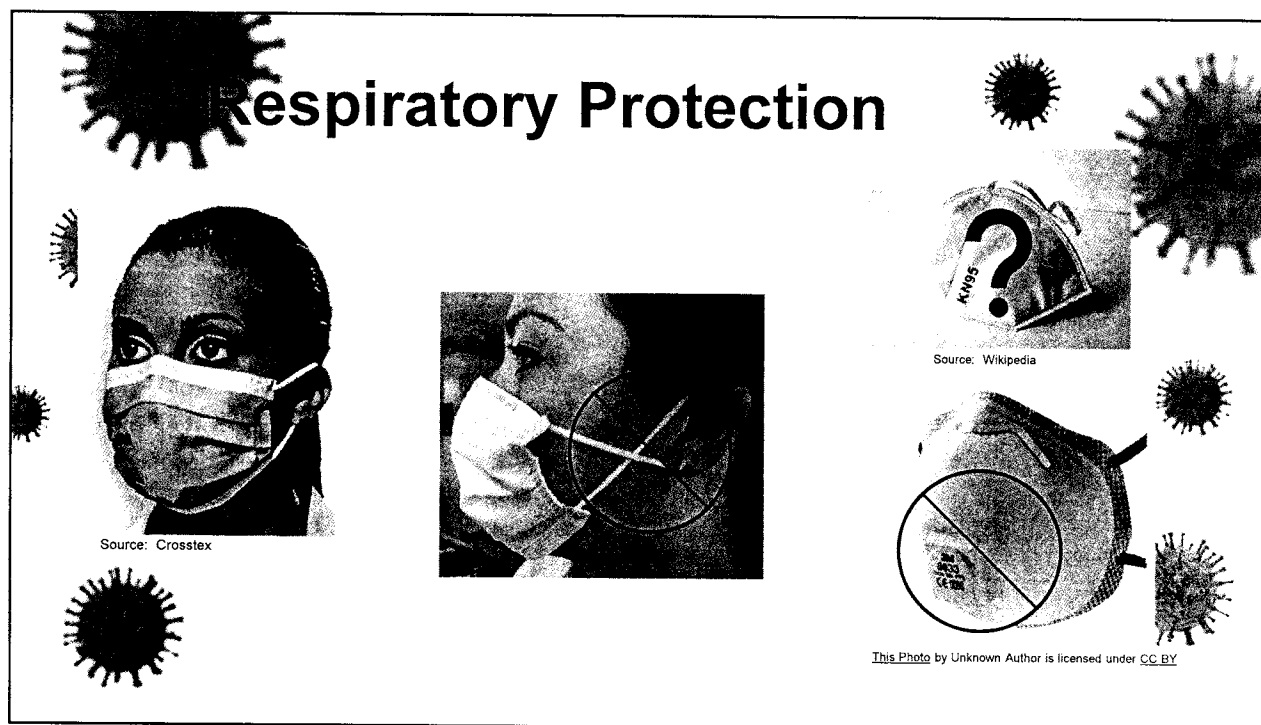
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Masks vs. Respirators

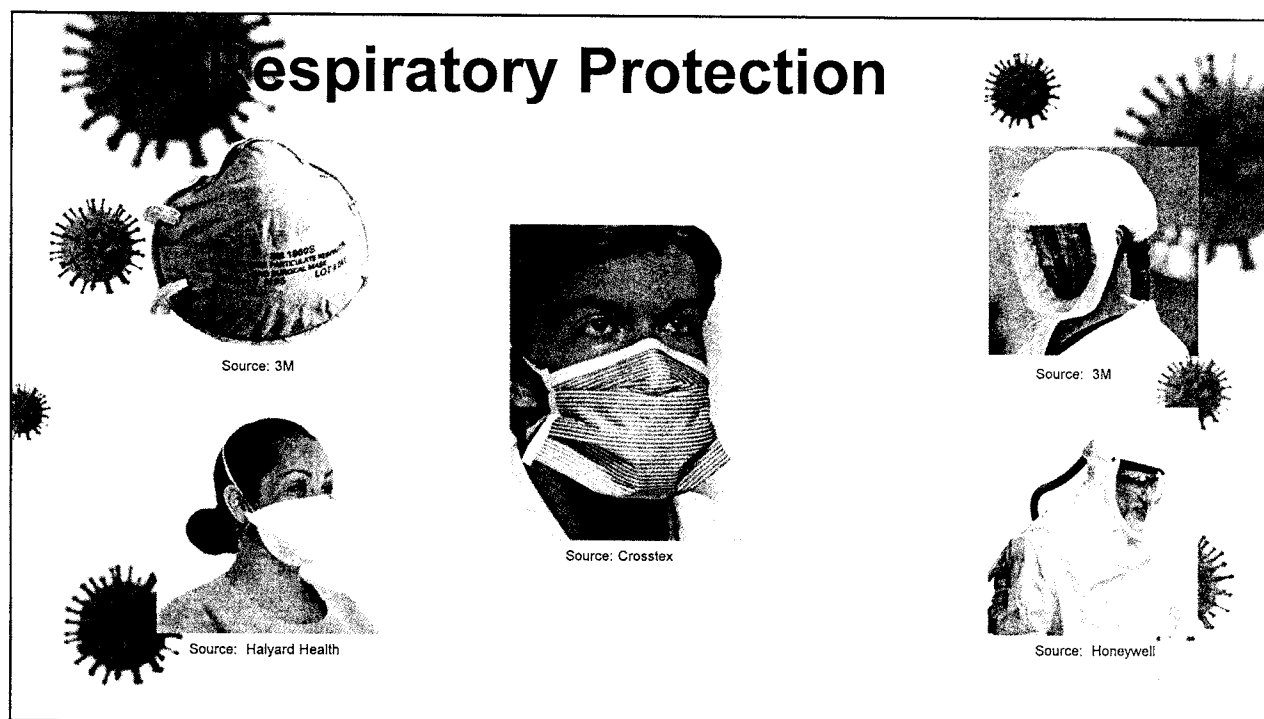
- | | |
|---|--|
| <ul style="list-style-type: none"> ▶ Varying levels of particle filtration and fluid resistance ▶ Not size specific ▶ No seal <ul style="list-style-type: none"> ▶ Allows inhalation & exhalation through gaps | <ul style="list-style-type: none"> ▶ Standardized particle filtration and fluid resistance ▶ Size specific ▶ Seal on the face <ul style="list-style-type: none"> ▶ Allows inhalation & exhalation only through the respirator |
|---|--|

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Powered Air-Purifying Respirators – PAPR's

- ▶ Alternative to N95 respirator – higher level of protection
 - ▶ Higher air purifying factor (APF)
- ▶ Fit testing not required (by most manufacturers) – but wearers must be trained on use
- ▶ May be less taxing from a physiological/breathing resistance



N95 = APF 10
PAPR under chin = APF 25
PAPR with shroud = APF 1000

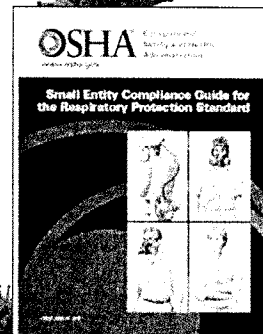


- ▶ <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/powered-air-purifying-respirators-strategy.html>

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Wearing Respirators

- ▶ Not the same as just donning a mask...
 - ▶ Respiratory protection plan – OSHA-required
Respiratory Protection - Standards | Occupational Safety and Health Administration (osha.gov)
 - ▶ Medical evaluations
 - ▶ Occupational medical facility
 - ▶ Online evaluations
 - ▶ Training
 - ▶ Fit testing
 - ▶ Seal checks each time worn



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Respiratory Protection Training and Documentation

- ▶ OSHA Respiratory Protection Standard
 - ▶ <https://www.osha.gov/SLTC/respiratoryprotection/index.html>
- ▶ Respirator training
 - ▶ https://www.osha.gov/video/respiratory_protection/fittesting.html



Source: Microsoft Creative Commons

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Training Resources for Respirators


[Respiratory Protection - Training Videos | Occupational Safety and Health Administration \(osha.gov\)](#)



Source: OSHA

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Thank you!



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Part of the Owens & Minor Family

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