Trinity Health

Personal Protective Equipment (PPE) Guidebook for PUIs and COVID-19, v. 36.0 Revised 1/24/2024

Summary of Changes in this Version

- Aligned with terminology from CDC's Data Tracker using COVID-19 new hospital admissions rate/100,000 population, rather that admissions level.

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Occupational Safety and Health Administration (OSHA) Requirements Related to COVID-19

OSHA has primary responsibility for ensuring the safety and health of the workforce by setting and enforcing standards and by providing training, outreach, education, and assistance. Every effort is made to ensure that we are keeping our colleagues safe within our ministries.

The OSHA Vaccination, Testing, and Face Coverings ETS 1910.501 was issued and effective November 5, 2021. As a result of legal challenges to this ETS, the Supreme Court of the United States stayed this ETS in January 2022; therefore, this Vaccination, Testing, and Face Coverings ETS is no longer enforceable as a separate standard.

The Healthcare ETS 1910.502 was effective July 6, 2021, and was withdrawn in December 2021. However, OSHA has been clear that the COVID-19 log and the requirement for reporting hospitalizations or fatalities from work-related COVID-19 exposures remain in effect under the General Duty Clause (intended to ensure employers provide a work environment "free from recognized hazards that are causing or are likely to cause death or serious physical harm").

See also the Table that summarizes situations for which a N95 respirator or equivalent is required or optional below Summary of Use of N95 Respirators by Situation and Community Transmission Rate

PPE Purchased by Independent Providers

Independent providers will abide by Trinity Health guidance regarding procurement, maintenance and use of PPE.

PPE Purchased or Owned by Colleagues

For employed colleagues, Trinity Health procures PPE and related accessories (i.e., HEPA filters, belts or hoods needed for some models of PAPRs) that adhere to strict quality and efficacy standards on behalf of our employees. Colleagues who wish to purchase their own PPE must adhere to the following:

- **Respirators**:
  - **Use of Personally Owned Respirators by Colleagues:** – Colleagues may provide their own **respirator** under the two circumstances described below. When use of a respirator is required, it must meet OSHA's Respiratory Protection Standard (1910.134) requirements, e.g., medical evaluation, fit testing and seal check prior to each use. **These circumstances do not apply to any other types of PPE (see below).**
    - **Circumstance 1: ALL OF THE FOLLOWING APPLY**:
      1. Respirator use is **not required** by Trinity Health for that colleague or for that colleague's job tasks **AND**
      2. Trinity Health agrees to **permit voluntary use AND**
      3. Trinity Health has confirmed the colleague is **medically able** to use the respirator (not required for filtering facepiece/N95 respirators) **AND**
      4. Trinity Health has determined the respirator being used by the colleague would not in itself create a hazard **AND**
      5. Trinity Health has determined the respirator is cleaned, stored, and maintained by colleague so it does not present a health hazard to the wearer (not required for filtering facepiece/N95 respirators)
    - **Circumstance 2: ALL OF THE FOLLOWING APPLY:**
      1. Respirator use is **required** by Trinity Health for that colleague or for that colleague's job tasks **AND** Trinity Health does not have a respirator to provide to the colleague due to **supply shortage AND**
      2. The colleague has their own respirator of the same, or higher, protection type or grade

AND

3. Trinity Health has determined the respirator being used is of an equivalent or higher protection level as the respirator that is required by Trinity Health **AND**
4. The colleague passes a fit test for the respirator the colleague is supplying **AND**
5. Trinity Health has determined and ensured that the colleague -provided respirator will be cleaned, stored, and maintained in the same manner required for a mandatory use respirator under the local ministry's **Respiratory Protection Plan (RRP)** as defined by either the federal or state OSHA Respiratory Protection Standard **AND**
6. The local ministry's **RRP is updated for the use of the colleague-provided respirator** if it is a different type or grade than already in the plan.

- **Use of Colleague-Owned Respirator When Not Required for Job Function** –
  - If a Ministry's Respiratory Protection Program (RPP) Administrator approves voluntary use of a respirator, colleagues may provide their own respirator (e.g., an N95 respirator) instead of wearing a facemask where a facemask is required by a ministry. This is considered voluntary use under OSHA's Respiratory Protection Standard.

    If a colleague wants to use a Filtering Facepiece Respirator (FFR) on a voluntary basis:

    1. The ministry leads that oversee the ministry's RPP or designee **must:**
       - determine that the FFR the colleague desires to use does not pose a hazard to the colleague or others; **and**
       - colleagues **must** be provided the information found in Appendix D of OSHA Respiratory Protection Standard
    2. The ministry is **not** required to provide any medical evaluation or fit test for voluntary use of an FFR.
    3. ***If a colleague wants to use all other types of respirators (except FFRs), including but not limited to tight-fitting negative pressure respirators:***
    4. The ministry leads that oversee the ministry's RPP **must:**
       - determine that the respirator use will not in itself create a hazard, **and**
       - **must** provide the respirator users with the information contained in the standard's Appendix D, **and**
       - **must** ensure that the respirator users are medically qualified to wear respirators, **and**
       - **must** ensure that the respirators are properly cleaned, stored, and maintained

- **Eye Protection**
  - If a colleague wears prescription lenses and their work involves potential eye hazard, the colleague must wear eye protection that either
    - incorporates the prescription in its design, or
    - can be worn over the prescription glasses without disturbing the proper position of the prescription lenses or the protective lenses.
  - Trinity Health will not pay for non-specialty prescription safety eyewear when that eyewear can also be worn when not at work. Eye protection is available that fits securely over prescription eyewear, and Trinity Health will provide eye protection to wear over prescription eyewear.
  - All eye protection for patient care must be obtained by the ministry and adhere to the guidelines established in the Eye Protection section below.
    - Trinity Health does not permit colleagues to voluntarily bring in their own protective eyewear unless Trinity Health is experiencing a critical supply shortage in that type of PPE.
    - Questions about specific makes and models of eye protection and other PPE should be referred to the ministry's Supply Chain team and escalated to System Office Supply Chain Mailbox (PPEReqQuestions@trinity-health.org).

- **All Other PPE:**
  - Trinity Health does not permit colleagues to voluntarily bring in their own PPE unless Trinity Health is experiencing a critical supply shortage in that type of PPE.
  - Trinity Health does not reimburse a colleague who chooses to provide their own PPE, including accessories (i.e., HEPA filters, belts or hoods needed for some models of PAPRs), unless approved in advance and only under those specific circumstances as required by OSHA.
  - PPE and related accessories must meet requirements for protection and be maintained and used according to Trinity Health Policy.

- **PPE and related accessories** will be inspected by designated authorized local personnel to ensure PPE meets all applicable standards for the colleague's work area. Colleagues must wear ministry-provided, medical grade face masks as described in the PPE Selection Guide below.

CDC Recommendations

Universal Source Control (refers to use of facemasks or other type of device to cover a person's mouth and nose to prevent spread of respiratory secretions when they are breathing, talking, sneezing, or coughing). Note: universal source control is recommended when the COVID-19 new hospital admissions rate/100,000 population in the county (or counties) that the ministry serves is high as reported by the CDC Data Tracker [CDC COVID Data Tracker: Maps by Geographic Area].

Summary of Use of Source Control e.g. (Facemasks) by COVID-19 New Hospitals Admission Rate / 100,000 pop.*

	New Hospital Admissions Rate	
Setting	**Not High (low or medium)***	**High**
Patient Care Areas	Required for specific individuals as described below. Ministry should consider recommending use of facemasks for source control if there is increased activity of other viruses that cause severe respiratory infections, e.g., influenza (when activity is moderate or higher), RSV, etc.	Required
Well-defined areas Non-patient Care areas/ Not open to general public,	Optional	• Recommended if the COVID-19 new hospital admission rate is HIGH
Public Spaces (e.g., cafeteria, gift shop, waiting rooms, hallways)	Required for specific individuals as described below. Ministry should consider recommending use of facemasks for source control if there is increased activity of other viruses that cause severe respiratory infections, e.g. influenza (when activity is moderate or higher), RSV, etc.	Required

***Always follow local or state rule or requirements involving source control even when rate is not high. Optional use may not be permitted if local or state agencies require use at any transmission rate.**

- To address transmission from those with asymptomatic and/or pre-symptomatic infection, everyone entering a healthcare facility (e.g., healthcare personnel, patients, visitors), regardless of symptoms must wear a mask or face covering as described:
  - **High COVID-19 New Hospital Admissions Rate / 100,000 pop.** :

- Universal source control (masking) by colleagues and clinicians is required when **they are in areas of the healthcare facility where they could encounter patients.**
    - Use of source control (masking) is also recommended when colleagues are in well-defined areas (**as defined in ministry hazard assessment by Job Task Inventory**) that are restricted from patients and the general public (e.g., staff meeting rooms) when the COVID-19 new hospital admissions rate is HIGH. CDC provides this data by county. See CDC COVID Data Tracker for details.
- **Not High (i.e., low, or medium) COVID-19 New Hospital Admissions Rate :**
    - When COVID-19 new hospital admissions rate is not high, healthcare facilities are not required to use universal source control.
- **Individuals for whom source control** (masking) **is required at any COVID-19 new hospital admissions rate :**
    - Anyone with suspected or confirmed COVID-19 infection or other respiratory infection (e.g., those with runny nose, cough, sneeze); or
    - Those who have had close contact exposure or a higher-risk exposure (colleagues) with someone with COVID-19 infection, for 10 days after their exposure; or
    - Reside or work on a unit or area of the ministry experiencing a COVID-19 outbreak;
        - universal use of source control as a mitigation measure could be discontinued in units with an outbreak once no new cases have been identified after 14 days: or
    - Have otherwise had source control recommended by public health authorities; or
    - During periods of/or trends towards higher rates of COVID-19 hospital admissions or other respiratory virus, e.g. influenza, RSV, transmission wherein local leadership team determines need to apply source control ministry-wide or, based on a local risk assessment, targeted toward higher risk areas (e.g., emergency departments, urgent care) or patient populations (e.g., when caring for patients with moderate to severe immunocompromise)

- The following are options to the facemask for source control if a colleague voluntarily prefers one of these alternatives:
    - KN95 mask provided by Supply Chain at the ministry
    - Colleague's personally owned NIOSH-approved N95 or equivalent respirator

Standard Precautions

The CDC defines **Standard Precautions** as the basic practices that apply to all patient care, regardless of the patient's suspected or confirmed infectious state, and apply to all settings where care is delivered. These practices protect healthcare personnel and prevent healthcare personnel from transmitting infections to other patients or the environment.

- **Elements and CDC Recommendations for PPE for Standard Precautions:**
    - *Mask and Eye protection (glasses, goggles, or face shield)*:
        - Use during patient care activities likely to generate splashes or sprays of blood, body fluids, secretions, or excretions. Eye protection must be appropriate to the anticipated splash or spray risk.
        - **NOTE**: Personal eyeglasses or contact lenses are not considered eye protection.
        - Colleagues may select from face shields, goggles, safety type glasses or other eyewear that provides protection to front/sides of face, as well as procedural masks with integrated eye shields. See *Eye Protection: Selection Guidance*, below.
    - *Gloves*:
        - Use when touching blood, body fluids, secretions, excretions, contaminated items; for touching mucus membranes and nonintact skin
    - *Gown*:
        - Use during procedures and patient care activities when contact of clothing/ exposed skin with blood/body fluids, secretions, or excretions is anticipated

Transmission-Based Precautions

Transmission-Based Precautions (also called Isolation Precautions) vary by diagnosis. These practices are designed to apply to settings where care is delivered for specific types of infectious disease. **Droplet + Contact precautions – apply to those with acute COVID-19 except for ministries in states that require other categories of transmission-based precautions.**

Refer to infection-prevention-and-control-guidance-for-pui-or-confirmed-covid-19-in-healthcare-settings.pdf (trinity-health.org) for more information on transmission of COVID-19.

Application of COVID-19 New Hospital Admissions Rate to Use of PPE:

The COVID-19 new hospital admissions rate is defined and reported by the CDC as the number of new cases of COVID-19 admitted to an acute care facility within a 7-day period/ 100k population by county. There are some differences in CDC recommended PPE based on the hospital admissions rate in the community served by the ministry outlined in the PPE Selection Guide. Definitions of the COVID-19 new hospital admissions rate are from CDC.

- **HIGH COVID-19 Hospital Admissions Rate** is defined as ≥ 20 new hospital admissions of COVID-19 per 100,000 in total county population over the prior 7 days.
- **NOT HIGH COVID-19 Hospital Admissions Rate are any of the following:**
  - **Medium:** 10.9 – 19.9/100,000 population
  - **Low:** < 10.0/100,000 population

Precautions for patients with suspected or confirmed COVID-19

CDC updated recommendations require the use of **Standard Precautions** and appropriate transmission-based precautions. Use **Droplet + Contact Precautions (unless state or local rules require different categories)** when caring for person under investigation (PUI) and confirmed COVID-19. **, Healthcare personnel must wear PPE as outlined in the** PPE Selection Guide. See also Infection Prevention and Control (IPC) Overview for COVID-19 in Healthcare Settings for more details on routes of transmission for COVID-19 .

Universal PPE During HIGH COVID-19 New Hospital Admissions Rate:

Healthcare personnel (includes all colleagues, providers, and clinicians) [HCP] working in ministries located in areas with *HIGH COVID-19 New Hospital Admissions Rate* are more likely to encounter patients with COVID-19 infection that are asymptomatic or pre-symptomatic. Therefore, CDC recommends broader use of PPE when caring for patients during select procedures or situations as follows.

Respiratory Protection:

- NIOSH-approved particulate respirators with N95 filters or higher are **required** for:
  - All AGPs – any patient.
  - All surgical procedures that might pose higher risk for transmission if the patient has COVID-19 infection (e.g., that generate potentially infectious aerosols or involving anatomic regions where viral loads might be higher, such as the nose and throat, oropharynx, respiratory tract).
  - Units / areas that are experiencing an outbreak of COVID-19 especially if healthcare-associated COVID-19 transmission is identified
  - Units / areas where there is higher risk for COVID-19 transmission, e.g., ED where there is a high volume of patients awaiting clinical assessment.

Eye Protection:

- For direct patient care, eye protection (i.e., goggles or a face shield that covers the front and sides of the face) is recommended during periods when COVID-19 new hospital admissions rate is high.

Gowns and Gloves:

Follow standard and transmission-based precautions for use of gown and gloves.

PPE Selection Guide

PPE Selection Guide by Person and Situation

NOTE: Colleagues and clinicians must follow guidance below in addition to Contact + Droplet Precautions for all PUIs or those in isolation for acute COVID-19 or apply categories required by local or state rules.

Observe and adhere to Standard Precautions for all patients with addition of Transmission Based Precautions, when applicable based on suspected or confirmed diagnosis.

(e.g., adhere to Contact Precautions for care of patient with C. difficile)

COVID-19 New Hospital Admissions Rate	Applies to:	Situation	Gloves	Isolation Gown	Eye Protection Choose One:		Respiratory Protection Choose One:	
					Face Shield	Glasses or Goggles (see page 20)	PAPR Eye protection attached	Respirator: Must select face shield or eye protection based on splash or spray risk
Any new hospital admissions rate	**PUI, acute COVID-19 needing isolation or Patient who Refuses Testing**	**Any patient-facing encounter** (includes all ancillary services i.e. EVS, PT etc.)	√	√	√		√	√
HIGH (≥ 20 new admissions per /100,000 population)	**Patients NOT suspected to have COVID-19 and/or test, if ordered, is negative.** **See also System guides on testing pre-procedure and/or admission**	**Procedures with high risk of COVID-19 Transmission - any patient:** - Aerosol Genererating Procedures (AGPs) ex. Intubation, Nebulizer Rx, Heated High Flow O2, - Surgical procedures with instrumentation of the upper respiratory tract, **- working on unit with cluster or outbreak, -unit with higher risk of care of those with undiagnosed infection, e.g. ED**	√	Follow Standard or Transmission Based precautions for patient diagnosis	**REQUIRED:** Select this option if splash or spray likely	**REQUIRED:** Select this option if splash or spray is not likely	√	√
		Any other patient-facing encounter (includes direct patient care)			**OPTIONAL**		**OPTIONAL**	
	Public Areas where patients and visitors are present	Rounding Registration Desk**, *** Walking through the hallways Non Patient-facing tasks in a shared space	**Limit Crowding in these areas - wear facemask for source control (see also table on source control above)**					
NOT HIGH (new hospital admissions rate <20/ 100,000 population; i.e. medium or low)	**Patients NOT suspected to have COVID-19 and/or test, if ordered, is negative.** **See also System guides on testing pre-procedure and/or admission**	**Procedures with higher risk of exposure to aerosols :** - Aerosol Genererating Procedures (AGPs) ex. Intubation, Nebulizer, Heated High Flow, Bipap - Surgical procedures with instrumentation of the upper respiratory tract	√	**Follow Standard or Transmission Based precautions Wear source control based on ministry policy (see details on source control above).**				
		Any other patient-facing encounter (includes direct patient care)	**Follow Standard or Transmission Based precautions and wear source control based on ministry policy that is in effect (see details on source control above).**					
	Public Areas or Work not in patient care areas	Rounding Registration Desk Walking through the hallways Non Patient-facing tasks in a shared space	**Limit Crowding in these areas - follow local policy that is in effect for source control**					

- Refer to guidance for patients and visiors who are unable to mask.
- Registration colleagues should not enter room of PUI or patient in isolation for COVID-19 during provision of an AGP. If they do enter- follow PPE selection guide above.
- Eye protection recommended in the absence of physical barrier between the colleague and the patient **during any direct interaction** when hospital admission level is HIGH.

Additional Notes:

1. Always follow local or state rule or requirements involving use of PPE or use of facemask for source control if they exceed requirements in the Guidebook and the PPE Selection Guide. For example, optional use of source control may not be permitted if local or state agencies require use at any COVID-19 new hospital admissions rate.

2. Under **rare and extraordinary** circumstances, there may be emergent/urgent situations in which donning of all PPE may delay prompt response to assure safety of patients (see examples below). For these circumstances, the colleague's professional judgment and assessment can be used to respond to the patient's emergency need. In these circumstances the following elements of PPE must still be worn when responding to the patient who is in isolation because they are a PUI or have COVID-19:

- Respiratory Protection as described above
- Eye Protection as described above
- Gloves

Examples of these circumstances might be:

- Colleague observes a patient in acute respiratory/cardiac distress and needs to administer immediate, life-saving care while activating code activation & response system
- Colleague observes a patient close to or in the act of falling and at risk of injury. Patient Safety Attendants (PSAs) must always wear PPE appropriate for the patient diagnosis while monitoring patients.

Gloves

Glove Selection Guidance

Glove Selection Guide* *Always follow standard precautions		
	Vinyl	**Nitrile**
Description	They can be used for short-term clinical applications with low risk of exposure to potentially infectious materials. In times of crisis shortage, it is better to use vinyl gloves than no gloves at all. Vinyl gloves provide protection from contact with liquids and solids that are non-corrosive.	These gloves are the best choice when it comes to resistance to punctures or infectious materials. They provide better protection against potentially infectious materials as well as protection from chemotherapy drugs and lab chemicals when compared to vinyl gloves.
Made From	Polyvinyl chloride (PVC).	Synthetic Rubber
Approved Use Cases **(List is not all-inclusive)**	Non-patient care areas: • Biomed/Clinical Engineering • Delivery of Food/Nutrition trays/supplements • Home Health/Clinics if working with patients where there is no anticipated contact with blood/body fluids and low risk of puncture (i.e., taking a blood pressure or temperature) • Facilities **(Vinyl gloves are NOT APPROPRIATE for use with corrosive chemicals, even in crisis capacity.)** • Non-invasive imaging/radiology procedures • Patient registration • Patient Temperature screening stations • Transportation	Direct patient care areas: • Emergency Department • Environmental Services • ICU/CCU • Home Health/Clinics if working with patients where there is anticipated contact with blood/body fluids or risk of puncture • Lab • Laundry • Med/Surg • OB/Gyn • Oncology • Orthopedics • Security
NOT approved for	Chemotherapy Corrosive chemicals	
How to Sanitize	• Isopropyl alcohol-based hand sanitizers are acceptable to use on vinyl gloves • If using ethanol-based hand sanitizer, change gloves every hour • Disposable medical gloves can be disinfected for up to six (6) applications of ABHR or until the gloves become otherwise contaminated or ineffective.	• If using ethanol-based hand sanitizer, change gloves every hour • Disposable medical gloves can be disinfected for up to six (6) applications of ABHR or until the gloves become otherwise contaminated or ineffective.

Skin Prophylaxis and Treatment for Extended Use of Gloves

If you experience work-related incidents that you believe are a result of the PPE you are wearing (e.g., skin breakdown, rash, etc.), complete a Trinity Health Employee Incident Report (THEIR) and follow your ministry's requirements for reporting. If possible, retain the PPE involved to assist with completion of the report.

Apply hand cream every time--after hand hygiene if the condition allows. If wearing gloves for a long duration, emollients containing hyaluronic acid, ceramide, vitamin E or other repairing ingredients are encouraged. Urea-containing emulsions are recommended in treating cracking of the skin.

Long-term use of examination gloves easily causes maceration, characterized by whitening, softening, and wrinkling of the skin. Avoid wearing gloves for a long time and applying hand cream can reverse maceration. *Check with your local hand sanitizer provider to ensure hand creams are compatible with the hand sanitizer in use at your ministry.

If maceration cannot be relieved and subsequent erosion and exudation occur, topical use of zinc oxide ointment is recommended. Colleagues with contact dermatitis can use a low percentage topical glucocorticoid cream. Frequent cleansing and prolonged use of gloves may aggravate pre-existing hand eczema. Moisturizers together with topical glucocorticoid cream will help relieve the exacerbation. *Check with your local hand sanitizer provider to ensure hand creams are compatible with the hand sanitizer in use at your ministry.

Gowns

Gown Selection Guidance

Gowns are provided by local ministry.

Gown Optimization

Gown Stewardship: Gown supplies have stabilized. Ministries must return to conventional use strategies for gowns.

Eye Protection

Key Attributes:

- Colleagues may select from face shields, goggles, safety-type glasses, or other eyewear that provides protection to front/sides of face, as well as procedural masks with integrated eye shields. **Safety glasses or goggles must not be directly vented. Safety glasses or goggles must fit snugly from the corners of the eyes across the brow and must provide side protection that wraps around the temple far enough to protect the eyes from splashes or sprays.**

- The following eyewear items are **not appropriate** precautions against splashes and sprays:
  - Personal eyeglasses or contact lenses.
  - Clip on side shields.

Selection Guidance

Eye Protection Selection Guide* *Always follow standard precautions **NOTE: If the eye protection interferes with your ability to safely care for the patient, you must STOP USE and identify an alternative.**		
	Goggles or Glasses	**Face Shield**
Sample Image		
Selection Guidance	If a colleague is unable to complete a seal check on their respirator while wearing goggles or glasses, they must wear a face shield.	If the face shield interferes with the colleague's vision or ability to provide care, the colleague may use goggles or glasses as pictured in the image to the left above.
Approved Use Cases	All patient encounters with minimal chance of blood/bodily fluid exposure, regardless of COVID status. As a reminder, colleagues who wish to procure their own eye protection must adhere to the standards set forth in this document.	All patient facing care with likelihood of blood/bodily fluid exposure. The face shield is preferred for use of an N95 respirator as it provides the respirator protection against splashes and sprays.
Key Attributes	All eye protection must fit snugly from the corners of the eyes across the brow and provide side protection that wraps far enough around the temple to protect the eyes from splashes or sprays.	
Hand Hygiene	Hand hygiene must always be completed prior to donning or doffing any type of eye protection.	

Prophylaxis and Treatment for Extended Use of Eye Protection

If you experience work-related incidents that you believe are a result of the PPE you are wearing (e.g., skin breakdown, rash, etc.), complete a Trinity Health Employee Incident Report (THEIR) and follow your ministry's requirements for reporting. If possible, retain the PPE involved to assist with completion of the report.

Review Prolonged Ear-Dependent Mask Use Prophylaxis and Treatment under Respiratory Protection.

Respiratory Protection

Overview

Where a respirator is required, colleagues must comply with OSHA's Respiratory Protection Standard (1910.134), which includes medical evaluations and fit testing for respirators where respirators are required.

- Loose fitting Powered Air Purifying Respirators (PAPRs) do not require fit testing.
- Tight fitting PAPRs do require fit testing.
- N95 filtering facepiece respirators and other similar filtering facepiece respirators (FFRs), e.g., elastomeric, require fit testing. Reference your ministry's Respiratory Protection Program (RPP) or contact your RPP Administrator for more information.

Elastomeric Respirators

Elastomeric respirators must be colleague specific. See Disinfection of PPE when transferring the respirator between colleagues. These respirators are ideal for colleagues that work with high volumes of COVID-19+ or PUIs, or who perform a high volume of AGPs, such as Respiratory Therapists, Rapid Response Teams, EDs, COVID-19 units, or anesthesia personnel that that routinely intubate patients. Colleagues must be fit tested before using an elastomeric respirator. Refer to manufacturer's Instructions for Use (IFUs) for donning and doffing the make and model of elastomeric respirator available at your ministry.

PAPRs and CAPRs

Powered Air Purifying Respirators (PAPRs) and Controlled Air Purifying Respirators (CAPRs) should be colleague specific. These respirators are ideal for colleagues that work with high volumes of COVID-19+ or PUIs, or who perform a high volume of AGPs, such as Respiratory Therapists, Rapid Response Teams, EDs, COVID-19 units, or anesthesia personnel that routinely intubate patients. These respirators are also ideal for colleagues who are unable to pass a fit test or complete a seal check with an N95 respirator. These units may also be considered in ambulatory or other non-acute care settings for contingency when a patient presents unexpectedly at the location, has symptoms of possible COVID-19 and direct care, including collection of nasal specimens, is required. Refer to manufacturer's Instructions for Use (IFUs) for donning and doffing the make and model of PAPR or CAPR available at your ministry.

Source Control in PAPRs, CAPRs and Other Respirators with Unfiltered Exhalation:

To provide source control while wearing a PAPR or CAPR with unfiltered exhalation, colleagues need to wear a medical grade procedural or surgical mask under the PAPR or CAPR hood or cover the filter with a procedural or surgical mask, depending on the location of the exhaust output. (See N95 Respirator Work Practices, below). When donning a PAPR or CAPR, the colleague must obtain a clean procedural or surgical mask for source control. Wearing a contaminated procedural or surgical mask puts the user at risk of exposing themselves to any infectious material present on the outside of the mask.

N95 respirators must never be worn under a PAPR or CAPR. This doubles the number of respirators used, without providing any additional protection.

Elastomeric or filtering face piece respirators (including standard N95 respirators and the Envo® Mask N95 respirator equivalent) with an unfiltered exhalation valve:

- Elastomeric respirators are equivalent to N95 respirators. They are an alternative to N95 respirators and therefore can be used to conserve the supply of N95 respirators.
- Elastomeric or filtering face piece respirators with an unfiltered exhalation valve provide respiratory protection but do not provide source control. To provide respiratory protection and source control, cover the exhalation valve with a procedural mask that does not interfere with the respirator fit.
    - All use of these respirators requires the colleague cover the exhalation valve with a procedural mask that does not interfere with the respirator fit.
    - The FDA has recently begun to approve exhalation filters. If an approved exhalation filter is properly installed, the respirator provides source control, and a procedural mask is not required. Once approved filters are available, TH Supply Chain will reach out to users.

N95 Respirators

N95 respirators must be colleague specific. An N95 filtering facepiece respirator (FFR) is a type of respirator which removes particles from the air that are breathed through it. These respirators filter out at least 95% of very small (0.3 micron) particles. N95 FFRs can filter out all types of particles, including bacteria and viruses. Not everyone is able to wear a respirator due to medical conditions that may be made worse when breathing through a respirator. Before using a respirator or getting fit-tested, colleagues must have a medical evaluation to make sure that they are able to wear a respirator safely. In addition, achieving an adequate seal to the face is essential. OSHA's Respiratory Protection Standard requires that colleagues undergo fit testing annually and conduct a user seal check each time the respirator is used. Colleagues must pass fit testing and medical evaluation before using a respirator in the workplace. See Fit Testing for N95 Respirators, below.

- If colleagues are provided a N95 respirator that is different than the make and model to which they were fitted, a fit test for the new N95 respirator must be provided prior to use.
- If a colleague is aware of changes in their physical condition that could affect respirator fit (e.g., facial scarring, dental changes, cosmetic surgery, or obvious changes in body weight), a fit test must be completed to assure the N95 respirator is adequately protecting the colleague.

Summary of Use of N95 Respirator or Equivalent by Situation:

	Use of N95 Respirator or Equivalent by COVID-19 New Hospital Admissions Rate	
Situation	**NOT HIGH**	**HIGH**
Care of Person Under Investigation (PUI)	Required	Required
Care of COVID-19 Positive patient in isolation	Required	Required
Providing Aerosol Generating Procedure (AGP) to any patient	Optional	Required
Any surgical procedure that might pose higher risk for transmission if the patient has COVID-19 *(e.g., generate infectious aerosols or procedure involves entry into anatomic regions where viral loads might be higher, such as the nose and throat, oropharynx, respiratory tract).*	Optional	Required
Patient care units that see a high volume of patients who have not been evaluated *(e.g., Emergency Department, Urgent Care)*	Optional	Required
Care unit is experiencing an outbreak of COVID-19	Optional	Required

Respirator Fit Testing

See the section OSHA Compliance: N95 or Other Filtering Facepiece Respirator Conservation and Evaluation for summary of relevant OSHA guidelines regarding fit testing and respiratory protection conservation.

Fit Testing for N95 Respirators:

- NOTE: Colleagues must perform a seal check every time they don their N95 respirator. See Performing A Respirator Seal Check and follow the IFU from the manufacturer of the N95 respirator.

- Fit Testing Methods & Related Conservation Strategies for N95 respirators:
  - Fit Test Methods: There are two methods of fit testing – quantitative (destructive) and qualitative (non-destructive). A quantitative (destructive) fit test uses an instrument to numerically measure the effectiveness of the respirator. A qualitative (non-destructive) fit test is a pass/fail test that relies on the individual's sensory (taste or smell) detection of a test agent such as Saccharin (sweetener) or Bitrex® (bitter) solutions.

  - OSHA requires that ministries provide training to HCP using respirators to understand that if the structural and functional integrity of any part of the respirator is compromised, it must be discarded, and that if a successful user seal check cannot be performed, another respirator must be tried to achieve a successful user seal check. See Performing a Respirator Seal Check.

- Inform employees to notify the Respiratory Protection Program Administrator for their ministry of changes in their physical condition (e.g., facial scarring, dental changes, cosmetic surgery, or obvious changes in body weight) that could affect fit of N95 respirator to which they were successfully fitted. Explain to personnel that, if their face shape has changed since their last fit test, they may no longer be getting a good facial seal and may not be adequately protected.
- HCP must perform a user seal check each time they don a respirator. Explain the importance of seal check to employees and provid needed assistance to ensure this objective is met (i.e., use of PPE safety coaches or other colleagues trained in proper use of PPE to help evaluate seal checks).
- Follow state OSHA requirements when they are more restrictive than Trinity Health's guidance.
- If a colleague experiences a work-related incident that may be the result of the PPE being worn (e.g., skin breakdown, rash, etc.), complete a Trinity Health Employee Incident Report (THEIR) and follow the local ministry's requirements for reporting. If possible, retain the PPE involved to assist with completion of the report.

Selection Guidance

See PPE Selection Guide and refer to PPE Purchased by Colleagues for additional information

Clear Mask Options

Procedural and surgical masks cover mouths and noses and impair the ability of those who are deaf or hearing impaired to effectively communicate with healthcare colleagues. Use of a see-through mask instead of a procedural or surgical mask for these populations, where visual cues are essential, can help facilitate understanding and prevent miscommunication. See-through masks are designed for both comfort and breathability of the wearer while providing protection from aerosols, fluids, and sprays through its transparent plastic barrier, and allowing hearing impaired or deaf patients to read health care provider's lips. **See-through masks are NOT N95 or equivalent filtering facepiece respirators and are not to be used in situations where N95 or equivalent respirators are required.**

See-through masks must only be used when caring for a patient who is deaf or hearing impaired. This can involve any Non-COVID-19 or Non-PUI area but may be especially appropriate for patient registration and speech pathology areas. Consideration can also be given for use with pediatric patients, behavioral health patients, or patients with other disabilities.

See-through masks are not appropriate PPE for COVID-19 or PUI areas. A PAPR is the preferred PPE when caring for patients who are deaf or hearing impaired in COVID-19 or PUI areas. If a PAPR is not available, the health care provider must wear an N95 or equivalent face filtering respirator.

How to Wear a Procedural Mask

Procedural and Surgical Mask Fit

The fit of the medical device (i.e., medical grade procedural or surgical mask) used to cover the wearer's mouth and nose is a critical factor in the level of source control (preventing exposure of others) and level of protection to mitigate the wearer's exposure to infectious particles. Facemasks that conform to the wearer's face so that more air moves through the material of the facemask rather than through gaps at the edges are more effective for source control than facemasks with gaps and can also reduce the wearer's exposure to particles in the air. Use of procedural or surgical masks with metallic nose strips is recommended. See a supervisor for assistance with procedural or surgical mask fit.

Respiratory Protection Optimization

System-wide supply of N95 respirators and procedural and surgical masks is monitored by System and ministry Supply Chain team. These teams are responsible for notifying colleagues and clinicians of any changes in normal inventory. The following are important stewardship work practices for colleagues and clinicians to follow to help support a sustainable supply of respiratory protection and other PPE. **For Colleagues**: Assure supplies of disposable masks are secure and their deployment is overseen by colleagues rather than available in unsupervised areas, e.g., respiratory hygiene stations at points of facility entry.

- **For Patients or Visitors: Colleagues at points of entry to the ministry, e.g., reception, registration, etc. can provide disposable procedure masks to patients or visitors upon request and when these patients and visitors arrive without face covering or a mask.**
- If not involved in direct care, other healthcare personnel, e.g., support services – Food Services, Facilities Management, are not to enter the rooms of PUIs or those with confirmed COVID-19 except for an emergency or as established by local ministry.
    - Direct care personnel should bundle activities to minimize the number of times a room is entered (e.g., check vital signs during medication administration, deliver food tray and perform room cleaning and disinfection while performing other care, etc.) and plan which activities will be performed at the bedside.

Figure 1.0: Surgical Mask (with ties)

Figure 2.0: Procedural Mask (with ear loops)

- Procedural masks (those with earloops) may be considered for use in the operative setting if supply of surgical masks (those with ties) becomes limited:
    - Procedural masks should first be considered for use by OR staff who are not working directly over the surgical field
    - The procedural mask should fit snugly in a manner that prevents gaps at the sides of the mask
        - Ear loops that are loose should be tightened in order to help prevent "gapping." Other devices or techniques may be used to assist with fit, but **must be covered by the surgical bouffant/cap**.
            - Tying small knots at the end of the ear loops until a snug fit is achieved.
            - Mask "ear savers"

- Button headbands
- The ear loop mask selected should be in accordance with the needed barrier level needed for the operative procedure (for example, Level 3)

N95 Respirator Work Practices

Recommended work practices involving use of N95 Respirator in High Patient Volume areas:
Context: Given periodic experience at ministries involving increased number or surge of cases of COVID-19 in communities served, especially from newly detected variants, it is prudent to optimize protection of clinicians and colleagues in areas like the ED where almost all are presenting for urgent or emergent care needs and have not been assessed for symptoms of COVID-19 – also there is less ability in these settings query patients remotely prior to their presentation for care for possible symptoms of active COVID-19.

- Colleagues in these settings are required to wear a N95 respirator or equivalent when COVID-19 community transmission rate is high. When the rate is not high colleagues can voluntarily don an N95 respirator or equivalent when beginning their shift.
  - When needing to provide direct care, add eye protection.
  - During initial assessment of patients assigned for direct care continue to wear the N95 respirator for initial and any subsequent patients UNTIL:
    - The provider determines a test for COVID-19 (would include any patient that triage has identified as PUI, e.g., has symptoms of possible COVID-19), is needed and ordered. After care of this patient the colleague doffs their N95 respirator, discards it and obtains and dons a new N95 respirator.
  - For eye protection that has been worn, disinfect or obtain new, clean eye protection.
  - For any need to see this patient again during the shift – follow these same steps, doff & discard the N95 respirator and don a new one.
    - After leaving the exam room or location for the situation just above, the colleague will be wearing a new N95 respirator. The colleague can continue to wear the N95 respirator for any new, subsequent patients.
    - As this colleague sees new patients – if any are PUIs for whom testing for COVID-19 is ordered, the colleague will doff and discard the N95 they were wearing as they leave the exam room for this new PUI and don a new N95 respirator and continue their work shift
      - Exclusion to the work practices above: COVID-19 test ordered for screening purpose, e.g., patient being admitted, transferred, pre-procedure, etc., but there is no "clinical" suspicion – would not isolate – and the colleague would not need to discard the N95 respirator being worn in this situation. Colleagues will continue to discard respirators when any of the following criteria are met:
        - Respirator becomes visibly soiled, wet, or damaged
        - If wearer is unable to obtain a proper fit seal, see instructions below regarding seal checks.

- Assure personnel perform **seal check** (for proper seal of the N95 respirator) prior to each use. If the colleague cannot achieve a seal:
  - Colleagues should check in with their supervisor for any concerns about seal check. The supervisor will assess whether the respirator is damaged or faulty.
    - If the N95 respirator is not damaged or faulty, but the colleague cannot achieve a seal, the supervisor will ask the colleague to discard the N95 respirator.
    - If a new respirator is damaged or faulty, the supervisor will report the issue to Supply Chain for tracking. Retain the respirator and document the lot number before reporting to Supply Chain.
  - A colleague's supervisor or designee will assist the colleague in identifying the appropriate respirator or alternative respiratory protection device (such as a PAPR or CAPR).

- **N95 and other disposable respirators must not be shared by multiple HCP.**

- All colleagues, regardless of unit or area assignment, must be able to readily obtain a new respirator, should they need one, in their assigned units. Leadership is to clearly communicate this process to all colleagues.

- Emphasize use of N95 respirators for situations outlined in the PPE Selection Guide and other guidance in this document.

- Colleagues must wear a face shield to protect the N95 respirator from soil, sprays or other damage when a splash or spray is anticipated.

- Never wear a surgical or procedural mask over an N95 respirator, unless it has an unfiltered exhalation valve (see Source Control in PAPRs, CAPRs and Other Respirators with Unfiltered Exhalation, above). This is against the manufacturer's instructions for use and will not increase the protection of the respirator.

- Make sure colleagues are aware of alternatives to N95 respirators, e.g., elastomeric, PAPR, Envo® Mask, etc., as these are reusable devices.

    - If available, personnel should prioritize use of powered air purifying respirators (PAPRs) for all AGPs or other care when indicated for PUIs or patients with COVID-19.

    - N95 respirators are NOT to be provided to personnel with facial hair (e.g., beard) that interferes with the functionality of the respirator. Options for personnel with a beard must use PAPR designed for use with facial hair or remove facial hair during response to this pandemic and wear an N95 respirator. PAPRs suitable for use with facial hair will vary by manufacturer.

- The CDC has provided a list of all manufacturers and model numbers for N95 respirators, as well as alternative approved manufacturers of N95 respirator equivalents.

- When there is a limited supply of filtering facepiece respirators, employers may follow the CDC's ''Strategies for Optimizing the Supply of N95 Respirators'' , Strategies for Optimizing the Supply of N95 Respirators: COVID-19 | CDC
- Where possible, employers are encouraged to select elastomeric respirators or PAPRs instead of filtering facepiece respirators to prevent shortages and supply chain disruption.

Prolonged Ear-Dependent Mask Use Prophylaxis and Treatment - Ears

If a colleague experiences work-related incidents that are believed a result of the PPE being worn (e.g., skin breakdown, rash, etc.), they are to complete a Trinity Health Employee Incident Report (THEIR) and follow their ministry's requirements for reporting. If possible, retain the PPE involved to assist with completion of the report.

When expecting prolonged use of ear-dependent ("procedural" or "ear loop") masks, the following steps are recommended for behind the ears care:

Skin injury prevention recommendations:

- Consider a headband with buttons or an "ear saver" device to protect ears while wearing masks or respirators that loop behind the ears.
- Apply a hydrocolloid dressing (i.e., DuoDERM®) behind the ears for those who are at high risk of skin breakdown from wearing a mask.
- Apply a barrier film wipe (i.e., Cavilon™ No Sting Barrier Film Wipe (1mL)) daily:
    - This product is intended to protect the skin from moisture, adhesives, and friction. Do not use on skin that is not intact.
    - This product provides a clear coating of protection on the skin
    - It is a hypoallergenic, alcohol-free, no-sting formula
    - Apply per manufacturer's instructions
- After using an ear-dependent mask, clean and dry the external ear. Using a moisturizer is recommended after cleansing.

Skin Injury treatment recommendations (skin is not intact or not blanchable):

- Consider consulting a wound ostomy nurse if skin breakdown occurs.
- Apply a hydrocolloid dressing (i.e., DuoDERM® Extra Thin Hydrocolloid dressing)
    - Apply per manufacturer's instructions

- Change dressing per manufacturer instructions

Prolonged PPE Use Prophylaxis and Treatment - Face

It is important to note that masks or N95 respirators should not irritate the colleague's skin. If a colleague experiences discomfort outside of the scenarios below, they should complete a THEIR and notify their supervisor for guidance and follow the ministry's requirements for reporting. If possible, retain the PPE involved to assist with completion of the report. When expecting prolonged use of N95 respirators or masks, the following steps are recommended for care of the face:

Cosmetics

Do not wear cosmetics under surgical/procedural masks and respirators as they can contribute to several skin issues when combined with prolonged use of PPE.

Cleansing Routine

When removing PPE, colleagues should complete hand hygiene and wash their face as soon as possible. Use a gentle hypoallergenic cleanser and warm (not hot) water to thoroughly wash the face, including the nasal vestibule (under the nose) and the retroauricular (behind the ear) area. Allow skin to dry. If the skin is intact, apply moisturizer. For severe contact dermatitis or broken skin, complete a THEIR and report to your supervisor for further evaluation.

Bruising

A tight seal is necessary for the respirator to protect the user. However, to relieve pain from bruising, users can apply cool compresses for 20-30 minutes after their shift.

Eczema

For irritant contact dermatitis or allergic contact dermatitis, colleagues should

- Wash their face and apply hydrocortisone ointment 1% to affected areas, followed by a barrier cream meant for chapped skin (i.e., Vaseline, Aquaphor).
- Apply a barrier cream both prior to and after mask use. NOTE: Barrier creams may interfere with the fit seal on an N95 respirator. Do not apply creams prior to respirator use. Apply after respirator use only.
- Put 1-2 layers of sterile gauze inside a procedural or surgical mask to protect the skin from the mask material if it is the source of the reaction. The gauze should be changed as it becomes damp or soiled.
- Avoid breathing through the mouth during use of a surgical or procedural mask and keep their lips from contacting the contaminated sides of the mask.
- After removing the mask, avoid touching the face until hand hygiene is performed.

Acne

Wash or wipe sweat off the area as soon as the mask or respirator is removed. Consider a face wash with salicylic acid or benzoyl peroxide. Do not wear cosmetics under an N95 respirator as this may exacerbate the issue.

Skin Breakdown

Wash with a gentle soap or cleanser. Apply a barrier cream meant for chapped skin (ex. Vaseline, Aquaphor). While off-duty, consider a hydrocolloid dressing. **NOTE: Barrier creams or padding may interfere with the fit seal on an N95 respirator. Do not apply creams prior to respirator use. Apply after respirator use only.**

Performing a Respirator Seal Check

Colleagues must perform a seal check **every time they don an N95 Respirator**

EQUIPMENT

RESPIRATOR SEAL CHECK

After you put on your respirator, perform a seal check by placing your hands over the facepiece, as shown below, and then exhaling gently. The seal is considered satisfactory if a slight positive pressure builds up inside the facepiece without air leaking from the seal.[15] Air leakage is evidenced by the fogging of your glasses, a feeling of air trickling down your uncovered face, or a lack of pressure buildup under the facepiece.

If the respirator has an exhalation valve, cover the filter surface with your hands as much as possible and then inhale. The seal is considered satisfactorily if the facepiece collapses on your face and you don't feel air passing between your face and the facepiece.

Source: Lippincott Nursing, procedures. Online.

Miscellaneous PPE

Head Covers

The CDC **does not currently require the use of head covers** such as surgical bouffant for the care of COVID-19 patients or PUIs. Supply of surgical bouffant caps is to be conserved for use in the surgical and procedural areas as raw materials used to make these products are becoming more difficult to obtain.

Alternatives to surgical bouffant caps that can be considered if desired by the caregiver:

- Bouffant caps that are traditionally used for food and nutrition areas
- Shower caps
- Satin hair bonnets (often found in beauty supply stores)
- Staff may also consider procuring their own re-usable Cloth head covers
  - Colleagues will not be reimbursed for purchases made outside of our Procurement channels, and Trinity Health is not responsible for maintenance of these head covers
- Cloth head covers should be laundered daily
- If colleagues choose to procure their own head covers, they must adhere to local policy for professional attire.

Head coverings are not required or recommended. If a colleague chooses to wear a head covering, it is preferred for the colleague to keep the head cover on throughout their shift. Colleagues may wear head coverings between COVID and non-COVID rooms all day while other PPE is changed out. Because it is not addressed by CDC PPE guidance, head coverings are not considered PPE.

If the colleague removes the cover, e.g., during breaks or lunch:

- Donning:
  - Perform hand hygiene before donning a head covering
  - Don the head cover
  - Perform hand hygiene after donning
- Doffing:
  - Perform hand hygiene before doffing a head covering
  - Doff the head cover
  - Store the head cover in a separate paper bag.
  - Perform hand hygiene after doffing

Head covers must be washed in hot water and laundry soap, adding bleach to the load.

Shoe Covers

The CDC **does not currently require the use of shoe covers** for the care of COVID-19 patients or PUIs. Supply of shoe covers must be conserved for use in areas where they are dictated by Standard or Transmission-Based Precautions as raw materials used to make these products are becoming more difficult to obtain.

Disinfection of PPE

Item Type	Sample Image (styles vary by site)	Sub Type	Disinfection Process
CAUTION: Always hold items away from your airway during disinfection and allow to fully dry before re-donning. Failure to do so may result in irritation of the airway.			
ClearMask or Detroit Sewn See-through Mask	 		1. These masks are colleague specific and are not to be shared. 2. These masks may be reused if not visibly damaged. Masks must be discarded if visibly damaged or cannot be cleaned. 3. Masks must be cleaned and disinfected after each use • When doffing, use care as the exterior is potentially contaminated • Use an approved disinfectant wipe to remove any visible contamination • While wearing gloves, carefully wipe the inside, followed by the outside of the mask using a clean cloth saturated with neutral detergent solution or cleaner wipe. If available, use a sanitizing wipe designed for touch screens • Hold the mask in your hand while you carefully wipe the outside of the mask using a wipe or clean cloth saturated with EPA-registered disinfectant solution • Fully dry (air dry or use clean absorbent towels) • Place the mask into an unsealed paper bag for next use • Remove gloves and perform hand hygiene • If the ministry has the ability to provide laundry services, see Detroit Sewn See-through Mask Laundry Instructions, below. • **ClearMasks are not to be laundered.** **Detroit Sewn See-through Mask Laundering Instructions** • The Detroit Sewn See-through Mask may also be laundered if a ministry has the ability to provide laundry services for these masks. Masks must be commercially laundered. • Users must mark their names on the mask in permanent marker prior to sending to laundry • Machine wash warm,140-150 degrees; tumble dry. • Can be bleached.

			• Laundered Detroit Sewn See-through Mask should be inspected for damage or tears prior to use. • Damaged masks must be discarded. • Laundered masks must be returned to the original user.
Face Shields		Disposable or Reusable	1.While wearing gloves, carefully wipe the inside, followed by the outside of the face shield or goggles using a clean cloth saturated with neutral detergent solution or cleaner wipe. If available, use a sanitizing wipe designed for touch screens. 2.Hold the shield in your hand while you carefully wipe the outside of the face shield or goggles using a wipe or clean cloth saturated with EPA-registered disinfectant solution. **Do not place the shield on a flat surface; doing so may cause the shield to crack.** 3. Hold the shield in your hand while you wipe the outside of face shield or goggles with clean water or alcohol to remove residue. **Do not place the shield on a flat surface; doing so may cause the shield to crack.** 4. Fully dry (air dry or use clean absorbent towels). 5. Remove gloves and perform hand hygiene.
Goggles /Eye Protection	 		1.While wearing gloves, carefully wipe the inside, followed by the outside of the face shield or goggles using a clean cloth saturated with neutral detergent solution or cleaner wipe. If available, use a sanitizing wipe designed for touch screens. 2.Hold the item in your hand and carefully wipe the outside of the item using a wipe or clean cloth saturated with EPA-registered hospital disinfectant solution. **Do not place the item on a flat surface; doing so may cause hard plastic items to crack.** 3.Hold the item in your hand and wipe the outside (patient facing side) of goggles with clean water or alcohol to remove residue. **Do not place the item on a flat surface; doing so may cause hard plastic items to crack.** 4.Fully dry (air dry or use clean absorbent towels). 5. Remove gloves and perform hand hygiene.
Reusable Gowns			Gowns must be laundered according to local policy.
Gloves		Vinyl and Nitrile	While disinfecting of gloves is not recommended, during times of supply crisis colleagues may do so to extend the life of the glove. Observe and adhere to all manufacturer IFUs. When re-using gloves, change after six uses/disinfections. • Isopropyl alcohol-based hand sanitizers are acceptable to use on gloves • If using ethanol-based hand sanitizer on vinyl, change gloves every hour or after six uses, whichever is more frequent

<table>
<tr>
<td rowspan="2">Respirators</td>
<td>N95 Respirators
3M 1860
 
3M 1860S
 
O&M Halyard
46727
  </td>
<td>Decontamination of used N95 respirators is no longer permitted.</td>
</tr>
<tr>
<td>Elastomeric Respirators/Envo® Masks
 
  </td>
<td>Follow manufacturer's Instructions for Use (IFU). Follow the IFU for submersion disinfection if any one of the following apply:
• Before the respirator is used by a colleague other than the designated user, or
• If the respirator is assigned to another user, or
• After the designated user experiences any type of infectious illness, or
• Before placing in a clearly labeled and dated storage container, or
• If the respirator cannot be cleaned via the wipe-down disinfection below.

Note: Filter cartridges should be handled following the manufacturer's Instructions for Use (IFU). Careful selection of disinfectant is needed to prevent the degradation or deterioration of the respirator material.

Wipe-Down Disinfection (at the end of shift and when soiled):
• Perform hand hygiene
• Remove the external filters
• Use EPA approved disinfectant and follow the EPA label instructions for the selected disinfectant.
• Wipe down each component (avoid getting the filter media wet):
○ Facepiece (interior and exterior)
○ Head Harness</td>
</tr>
</table>

		○ Hardcase filter and/or rigid plastic components of the filter assembly. • Allow to dry for appropriate dwell time. • Wipe components again with water to remove residual disinfectant. Air dry before next use • Store away from contaminated area when not in use • Perform hand hygiene
	PAPRs	Follow manufacturer's Instructions for Use (IFU) and/or see below: • Perform hand hygiene, don gloves • Use EPA approved disinfectant wipe. • Wipe down the inside and outside of the PAPR hood, including seams. • Allow to dry for appropriate dwell time. • Ensure it dries all the way before use. • If hood is a shroud, turn it completely inside out to dry. • Perform hand hygiene, doff gloves.
	CAPRs	Follow manufacturer's Instructions for Use (IFU) and/or see below: Do not immerse the battery, helmet and fan module into water or other liquid. This will cause irreparable damage to the helmet. Do not use solvent or alcohol to clean the helmet. **CAPRs must be cleaned and disinfected between uses and between different users wearing the system.** • **Clean and disinfect with EPA approved disinfectant effective against COVID-19** • Inspect the system and perform any assembly/dis-assembly instructions for disposable items or components that are worn/damaged. • Clean and disinfect all outside reachable surfaces and then over all inside surfaces. Observe dwell times. • Let air dry and re-assemble or place in storage.

References:

Infection Control: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) | CDC

1910.504 - Mini Respiratory Protection Program. | Occupational Safety and Health Administration (osha.gov)

Appendix

Glossary, Signs, and Job Aids

Glossary

ABHR or ABHS = Alcohol Based Hand rub- or alcohol-based hand sanitizer (ABHS); used for hand hygiene and typically contains ≥ 60% ethyl alcohol (ethanol).
AGP = aerosol generating procedure
CAPR = controlled air purifying respirator
Close contact = being within 6 feet of any other person for a cumulative total of 15 minutes or more over a 24-hour period during that person's potential period of transmission. The potential transmission period runs from 2 days before the person felt sick (or, for asymptomatic people, 2 days prior to test specimen collection) until the time the person is isolated.
Elastomeric respirator = a tightfitting respirator with a facepiece that is made of synthetic or rubber material that permits it to be disinfected, cleaned, and reused according to manufacturer's instructions. It is equipped with a replaceable cartridge(s), canister(s), or filter(s).
Eye Protection = protects the eyes from splashes or sprays. Includes goggles, safety glasses, face shields etc. Personal eyeglasses or contact lenses are **not** eye protection.
Facemask = a surgical, medical procedure, dental, or isolation mask that is FDA-cleared, authorized by an FDA EUA, or offered or distributed as described in an FDA enforcement policy. Facemasks may also be referred to as ''medical procedure masks.''
Filtering Facepiece Respirator (FFR) = a respiratory protective device that covers the nose and mouth, and is a tight-fitting, air-purifying respirator in which the whole facepiece functions as the filter. FFRs are certified by National Institute for Occupational Safety and Health (NIOSH). Includes the following devices:

- N95 Respirators
- Elastomeric Respirators

MDI = metered dose inhaler
PAPR (powered air purifying respirator) = an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.
Patient Facing = Colleagues who encounter patients routinely in the course of their work. There are two types of patient facing colleagues:

- **Direct Patient Care** colleagues are routinely within 6 feet of a patient
- **Non-Direct Patient Care** may encounter patients but are usually further than 6 feet away (ex. Food and Nutrition Services)

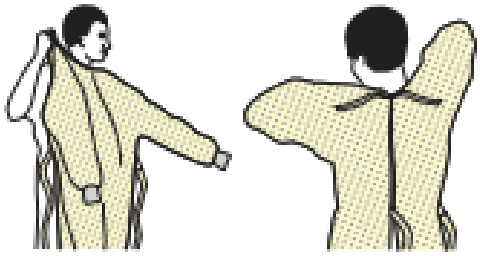
Personal Protective Equipment (PPE): Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards.
Respirator = a type of personal protective equipment (PPE) that is certified by NIOSH under 42 CFR part 84 or is authorized under an EUA by the FDA. Respirators protect against airborne hazards by removing specific air contaminants from the ambient (surrounding) air or by supplying breathable air from a safe source. Common types of respirators include filtering facepiece respirators, elastomeric respirators, and PAPRs. Face coverings, facemasks, and face shields are not respirators.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist

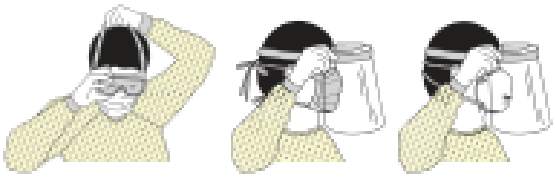


2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

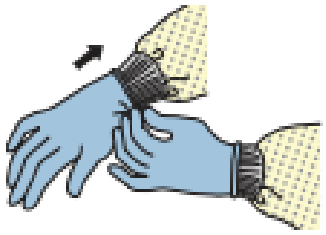
3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

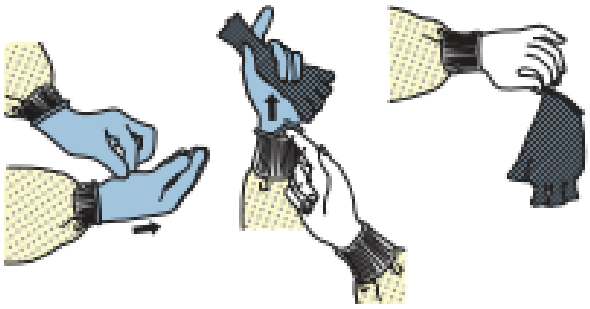
- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container

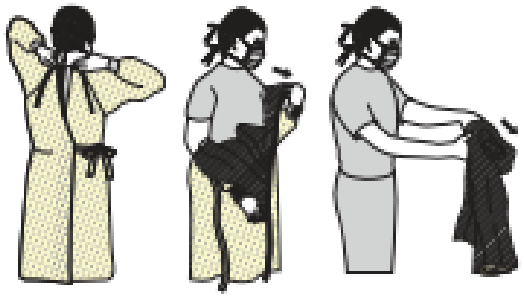


2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. GOWN

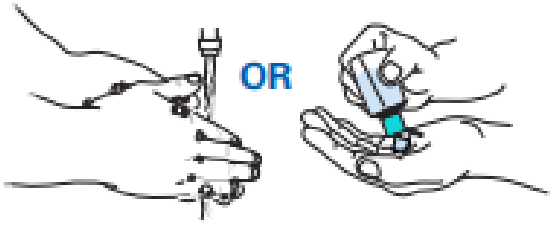
- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container



4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container

5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



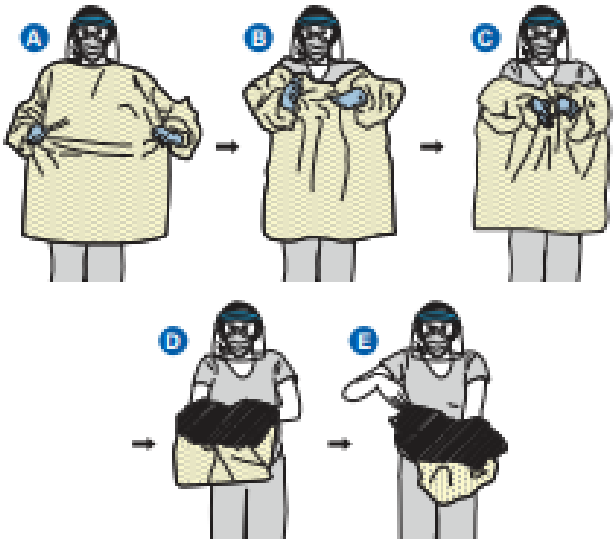
PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container

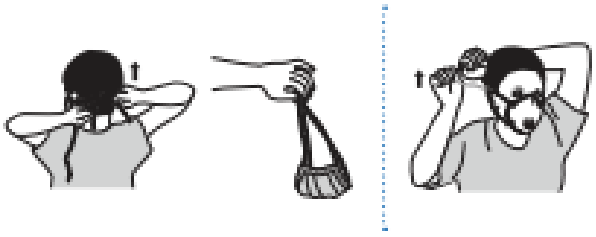


2. GOGGLES OR FACE SHIELD

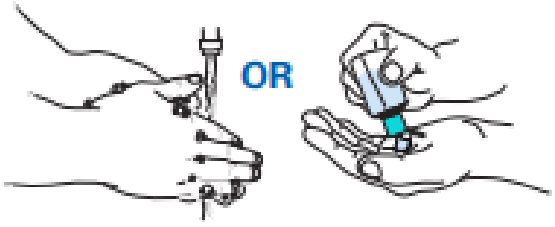
- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

Links to Cleaning Guidance

- Discharge (Terminal) Room Cleaning – Single and Semi-Private Rooms
- Emergency Department COVID-19 Patient Room Cleaning

Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency

TABLE S3-1. Air changes per hour (ACH) and time in minutes required for removal efficiencies of 90%, 99%, and 99.9% of airborne contaminants*

ACH	Minutes required for a removal efficiency of: 90%	99%	99.9%
1	138	276	414
2	69	138	207
3	46	92	138
4	35	69	104
5	28	55	83
6	23	46	69
7	20	39	59
8	17	35	52
9	15	31	46
10	14	28	41
11	13	25	38
12	12	23	35
13	11	21	32
14	10	20	30
15	9	18	28
16	9	17	26
17	8	16	24
18	8	15	23
19	7	15	22
20	7	14	21
25	6	11	17
30	5	9	14
35	4	8	12
40	3	7	10
45	3	6	9
50	3	6	8

reference point for Trinity Health ministries

*This table has been adapted from the formula for the rate of purging airborne contaminants (*99*). Values have been derived from the formula $t_1 = [\ln (C_2 \div C_1) \div (Q \div V)] \times 60$, with $T_1 = 0$ and $C_2 \div C_1$ – (removal efficiency ÷ 100), and where:

t_1 = initial timepoint
C_1 = initial concentration of contaminant
C_2 = final concentration of contaminants
Q = air flow rate (cubic feet per hour)
V = room volume (cubic feet)
$Q \div V$ = ACH

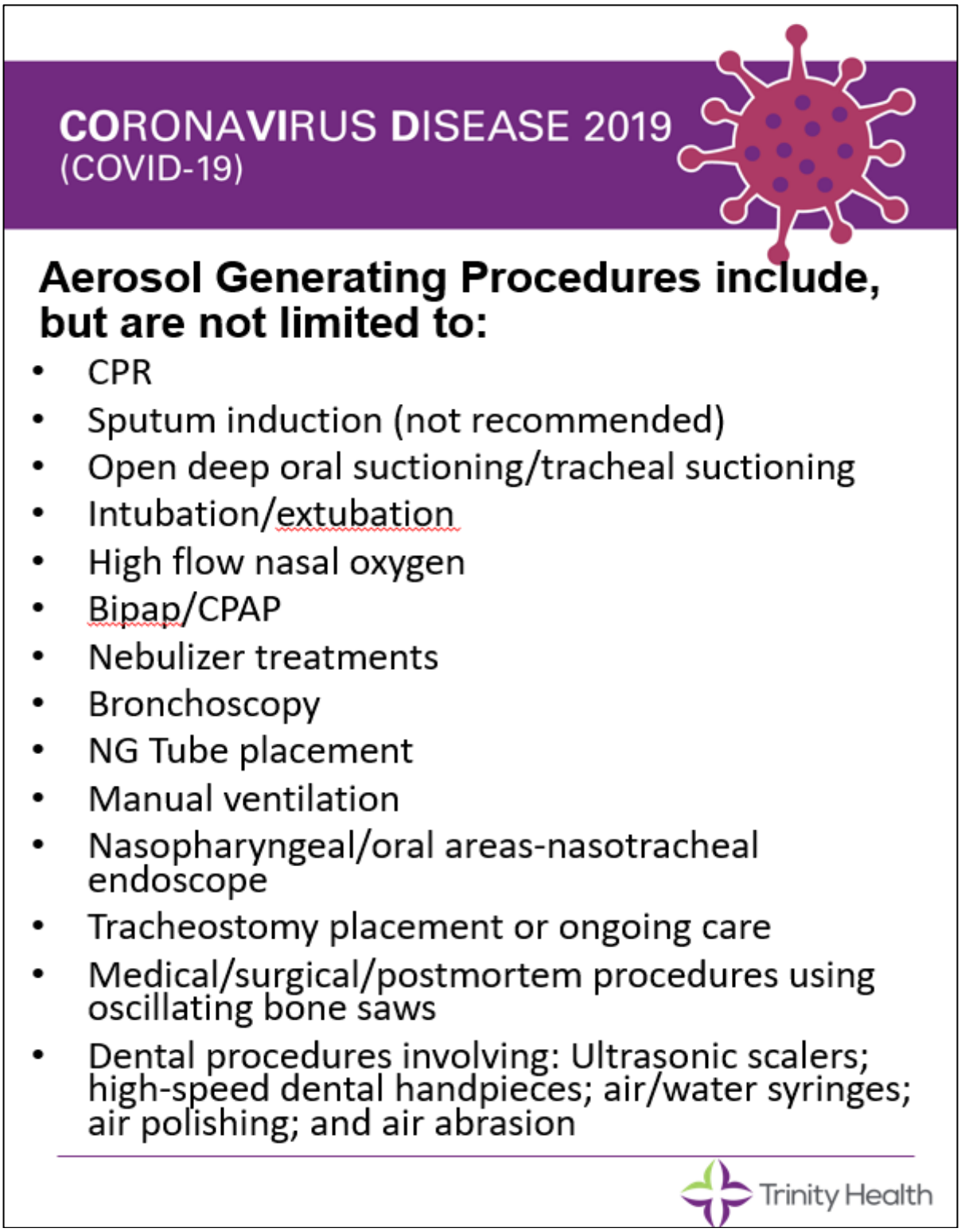
The times given assume perfect mixing of the air within the space (i.e., mixing factor = 1). However, perfect mixing usually does not occur, and the mixing factor could be as high as 10 if air distribution is very poor (*98*). The required time is derived by multiplying the appropriate time from the table by the mixing factor that has been determined for the booth or room. The factor and required time should be included in the operating instructions provided by the manufacturer of the booth or enclosure, and these instructions should be followed.

Source: Guidelines for Environmental Infection Control in Health-Care Facilities

Contingency Tiered Approach Based on Inventory of PPE if Inventory is at Crisis Level

	Strategies for Crisis Capacity of PPE (Regular and alternate products)	Possible Substitution
N95 respirator	• Extended use • Limited reuse	• Elastomeric or industrial respirator • Non-surgical respirator, or any filtration capacity above 95% • PAPR
Isolation Gowns	• Prioritize gowns for use during AGP, high touch procedures, do not use when entering room if nothing is going to be touched. • Use “safe/PPE free zone" just inside door to isolation room.	• Hazmat suits • Reusable isolation gowns (verify the gown is impermeable/fluid resistant) • Paper gowns • Plastic aprons to cover critical zones • Lab coat or jacket • Waterproof sports gear • Last resort: any physical barrier
Procedural Mask	• Extended use • Reuse	• Non-fluid resistant procedural masks (blue cones) • Use N95 respirators, CAPRs, PAPRs, isometric respirators • Utilize non-fit tested expired N95 respirators in pharmacy sterile compounding with extended use/reuse • Last resort: any physical barrier between patient and mucous membranes / homemade products
Surgical Masks	• Extended use • Reuse	• Procedural mask (see Surgical Mask Conservation, above)
Eye protection	• Disinfect and reuse eye protection – assign to each caregiver during assigned shift. If disinfected can be used between personnel	• Industrial face shields (for grinding metal) • Industrial goggles, safety glasses, etc. • Last resort: homemade face shields (must be Trinity Health-approved)

Examples of aerosol generating procedures



AGP Door Sign

Aerosol Generating Procedure in Process

Authorized Trained Personnel Only

- Keep Door Closed
- See Facilities for post-procedure clearance times
- All entrants must wear an N95 Respirator + Eye Protection or a PAPR until the clearance time has passed

Time Procedure Ended: _____

Time Room is Available:_____

Trinity Health

envo® Mask Use Guidelines

Envo® Mask without vent plug (left) and with vent plug (right)

Key Considerations: The Envo® Mask is a reusable NIOSH approved N95 respirator designed for superior comfort and seal. The AIRgel® cushion contours around the face and nose to provide a secure seal and to avoid glasses fogging. **Users must wear either a vent plug (pictured below) or a procedure mask over the exhalation valve in order to maintain source control.**

- Individually packaged filters remain clean and electrostatically charged until ready to use. Each filter has a ten-year shelf life, allowing for long term storage.
- Each mask kit includes mask, five (5) filters, headgear, and storage case.
- All colleagues must be trained and fit tested prior to use.
    - Colleagues must work with the ministry resource for fit testing and use the qualitative (non-destructive) fit testing option. This respirator cannot be fit tested using the quantitative (destructive) fit testing method.

General Guidelines

Prior to initial use:

- View the instruction videos here. **Do not click the *Shop Envo® mask* link on this page.** All procurement is to be done through Trinity Health Supply Chain.

Prior to each use:

- **Inspect** respirator before each use to ensure that it is in good operating condition.
- **Examine** all the parts of the respirator for signs of tears, breakage, or other damage. This includes the QuickFit headgear, exhalation valve, AIRgel® cushion, and filter.
- **Inspect** the filter prior to each use to ensure there are no holes or damage from misuse and it is not soiled and/or clogged.
- **Conduct** a user seal check before use as specified in the Fitting Instructions section of the Instructions for Use (IFUs).
    - **DO NOT** use the respirator if conditions exist that prevent a good seal between the face and the AIRgel® cushion of the respirator.
- **DO NOT** use with beards, other facial hair, or other conditions that prevent a good seal between the face and the sealing surface of the respirator.

How to use:

- View the instruction video here.

After each use:

- Dispose of soiled/clogged filters and damaged parts.
- See the Disinfection of PPE guidelines for disinfection of elastomeric respirators/Envo® masks for disinfecting guidance. Clean components per the manufacturer's instructions. Allow to dry prior to placing in the storage case.
- Store the respirator and sealed filters in the Envo® mask storage case away from contaminated areas when not in use. Unused filters should always be stored in the sealed poly bag and may be kept in the storage case (provided).

Filters:
Refer to guidance on N95 Respirator Conservation for guidance on the lifespan of the filters.

References:
https://www.cdc.gov/coronavirus/2019-ncov/hcp/elastomeric-respirators-strategy/index.html
Instructions for Use (IFU): https://envomask.com/instructions/