

# COVID-19

## CORONAVIRUS DISEASE

**VISION:** To improve the health of all Texans.

**MISSION:** TMA supports Texas physicians by providing distinctive solutions to the challenges they encounter in the care of patients.



Physicians Caring for Texans

# COVID-19: Personal Protective Equipment (PPE) Supply and Shortage

## Frequently Asked Questions (FAQs)

### TMA COVID-19 Task Force

APRIL 2020

**Are there currently shortages of PPE?** (See CDC: [Strategies to Optimize the Supply of PPE and Equipment](#) 04/03/2020)

**A.** Yes. Demand is exceeding supply due to extreme patient surge from COVID-19. Orders received are up to 10-fold normal demand for these items, although plans for surge manufacturing globally are underway. Given decreases in exports from select countries and the increases in demand, manufacturers of select types of PPE are reporting challenges in meeting the increased order volume. Specific challenges are being reported for N95 respirators and face masks, although there are additional reports of shortages of other PPE.

To help assess your own clinic's use of PPE and plan for a potential shortage, the Centers for Disease Control and Prevention (CDC) has a [PPE Burn Rate Calculator](#) to help with planning and optimization of PPE for response to COVID-19.

**What are the levels of surge capacity, and how do they impact the PPE that physicians use to care for patients?** (See CDC: [Strategies to Optimize the Supply of PPE and Equipment](#) 04/03/2020)

**A.** When the supply of face masks is limited, strategies and options for optimizing their use in health care settings depend on surge capacity. Surge capacity means the ability of health care communities to manage sudden, large increases in patient volumes that severely challenge the capacities of their facilities. A health care community's operational level of surge capacity guides the type of measures implemented to conserve face mask supplies as follows:

- **Conventional capacity:** Measures consist of providing patient care without any change in daily contemporary practices. This set of measures, consisting of engineering, administrative, and PPE controls, should already be implemented in general infection prevention and control plans in health care settings.
- **Contingency capacity:** Measures may change daily standard practices but may not have any significant impact on the care delivered to the patient or the safety of health care personnel (HCP). These practices may be used temporarily during periods of expected PPE shortages.
- **Crisis capacity:** Strategies are not commensurate with U.S. standards of care. These measures, or a combination of these measures, may need to be considered during periods of known PPE shortages.

**What engineering and administrative controls can be used?** (See CDC: [Strategies for Optimizing the Supply of N95 Respirators](#) 04/03/2020)

- A.** Preventing disease transmission uses a combination of interventions to be less reliant on PPE. Use of engineering and administrative controls and PPE often can reduce or avoid exposures to transmissible pathogens in health care facilities. Prompt detection, effective triage, and isolation of potentially infectious patients are essential control measures to prevent unnecessary pathogen exposure of patients, HCP, and visitors in a given facility.

Maximizing use of engineering and administrative controls is essential to reducing the need for PPE. Engineering controls include isolation of suspected or known patients, use of physical barriers such as glass or plastic between patients and HCP in reception areas, and maintaining proper ventilation systems so air flow moves from clean to contaminated areas. Administrative controls include reducing the number of patients going to the hospital or outpatient settings, excluding HCP not essential for patient care from entering the care area, reducing face-to-face HCP encounters with patients, excluding visitors to patients with confirmed or suspected COVID-19, cohorting patients and HCP, and maximizing use of telemedicine.

**What conservation strategies can we use when we are running low on PPE?** (See CDC: [Strategies to Optimize the Supply of PPE and Equipment](#) 04/03/2020)

- A.** In unique circumstances of overwhelming patient surge, depleting PPE supply, and crisis, CDC recommends the following strategies to conserve PPE:
- Cancel all elective and nonurgent procedures and appointments for which PPE is typically used by health care personnel.
  - Use PPE beyond the manufacturer-designated shelf life during patient care activities.
  - Implement limited reuse of PPE. Limited reuse of face masks is the practice of using the same face mask by one health care worker for multiple encounters with different patients but removing it after each encounter. As it is unknown what the potential contribution of contact transmission is for SARS-CoV-2, care should be taken to ensure that health care personnel do not touch outer surfaces of the mask during care, and that they remove and replace masks in a careful and deliberate manner.
    - PPE should be removed and discarded if soiled, damaged, or hinders breathing.
    - Not all PPE can be reused. Face masks that fasten to the user via ties may not be able to be undone without tearing and should be considered only for extended use, rather than reuse. Face masks with elastic ear hooks may be more suitable for reuse.
  - Health care personnel should leave patient care area if they need to remove a face mask. Face masks should be folded carefully so that the outer surface is held inward and against itself to reduce contact with the outer surface during storage. The folded mask can be stored between uses in a clean, sealable paper bag or breathable container.

- Prioritize face masks for selected activities such as:
  - Providing essential surgeries and procedures,
  - During care activities where splashes and sprays are anticipated,
  - During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable, and
  - Performing aerosol-generating procedures, if respirators are no longer available.

**What are options if no N95 respirators or face masks are available?** (See CDC: [Strategies for Optimizing the Supply of N95 Respirators](#) 04/03/2020; CDC: [Strategies for Optimizing the Supply of Facemasks](#) 03/17/2020)

**A.** When there are no N95 or higher protective respirators or face masks available at all, CDC recommends the following administrative and engineering controls:

- During severe resource limitations, consider excluding HCP who may be at higher risk for severe illness from COVID-19, such as those of older age, with chronic medical conditions, or who may be pregnant, from caring for patients with confirmed or suspected COVID-19 infection.
- Per CDC: *“It may be possible to designate HCP who have clinically recovered from COVID-19 to preferentially provide care for additional patients with COVID-19. Individuals who have recovered from COVID-19 infection may have developed some protective immunity, but this has not yet been confirmed.”*
- Use a face shield that covers the entire front (that extends to the chin or below) and sides of the face with no respirator or face mask.
- Consider use of expedient patient isolation rooms for risk reduction. Portable fan devices with high-efficiency particulate air (HEPA) filtration, carefully placed, can increase the effective air changes per hour of clean air to the patient room, reducing risk to individuals entering the room without respiratory protection. The National Institute for Occupational Safety and Health (NIOSH) has developed guidance for using portable HEPA filtration systems to create expedient patient isolation rooms. This approach involves establishing a high-ventilation-rate, negative pressure, inner isolation zone that sits within a “clean” larger ventilated zone.
- Consider use of ventilated headboards. NIOSH has developed the ventilated headboard that draws exhaled air from a patient in bed into a HEPA filter, decreasing risk of HCP exposure to patient-generated aerosol. This technology consists of lightweight, sturdy, and adjustable aluminum framing with a retractable plastic canopy. The ventilated headboard used in combination with HEPA fan/filter units can provide surge isolation capacity within a variety of environments, from traditional patient rooms to triage stations, and emergency medical shelters. In the absence of any remaining supply of N95 respirators, it may be possible to use this technology in conjunction with HCP and/or patients wearing face masks
- Have health care personnel use non-NIOSH-approved masks or homemade masks. In settings where N95 respirators are so limited that routinely practiced standards of care for wearing N95 respirators and equivalent or higher-level-of-protection respirators are no longer possible, and

surgical masks are not available, as a last resort, it may be necessary for HCP to use masks that have never been evaluated or approved by NIOSH or homemade masks. Considered using these masks for care of patients with COVID-19, tuberculosis, measles, and varicella. However, caution should be exercised when considering this option.

**Can I use homemade masks?** (See CDC: [Strategies for Optimizing the Supply of Facemasks](#) 03/17/2020)

**A.** CDC states that in settings where face masks are not available, health care personnel might use homemade masks (e.g., bandana, scarf) for care of patients with COVID-19 as a last resort. However, homemade masks are not considered PPE, since their capability to protect HCP is unknown. Caution should be exercised when considering this option. Homemade masks should ideally be used in combination with a face shield that covers the entire front (that extends to the chin or below) and sides of the face.

**How do I minimize the need to reuse N95 respirators?** (See CDC: [Strategies for Optimizing the Supply of N95 Respirators](#) 04/03/2020)

**A.** CDC recommends the following steps to minimize use of N95 respirators:

- Minimize the number of individuals who need to use respiratory protection through the preferential use of engineering and administrative controls.
- Use alternatives to N95 respirators (e.g., other classes of filtering facepiece respirators, elastomeric half-mask and full facepiece air purifying respirators, powered air purifying respirators) where feasible.
- Implement practices allowing extended use and/or limited reuse of N95 respirators, when acceptable.
- Prioritize the use of N95 respirators for those personnel at the highest risk of contracting or experiencing complications of infection.

**What other particulate filtering facepiece respirators can be used besides N95s?** (See CDC: [NIOSH-Approved Particulate Filtering Facepiece Respirators](#) 12/06/2018)

**A.** CDC has a list of NIOSH-approved particulate filtering facepiece respirators. In addition to N95, the list includes Surgical N95, N99, N100, R95, P95, P99, and P100 masks. During known shortages of respirators, use of respirators approved under standards used in other countries similar to NIOSH-approved respirators can be considered (a list of comparable respirators can be found on the CDC website). [Elastomeric respirators](#) and PAPRS can be considered as well during crises capacity but should not be used in surgical settings. Facilities using elastomeric respirators and PAPRS should have up-to-date cleaning/disinfection procedures.

**Can N95 respirators be reused?** (See CDC: [Pandemic Planning: Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings](#) 03/27/2020)

- A.** There is no way of determining the maximum possible number of safe reuses for an N95 respirator that would apply in all cases. However, when considering reuse, follow these CDC suggestions:
- Use a cleanable face shield to reduce surface contamination.
  - Discard N95 respirators following use during aerosol generating procedures or when contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
  - Hang used respirators in a designated storage area or keep them in a clean, breathable container such as a paper bag between uses. To minimize potential cross-contamination, store respirators so they do not touch each other and the person using the respirator is clearly identified. Storage containers should be disposed of or cleaned regularly.

**Can filtering facepiece respirators (FFRs) be decontaminated and reused?** (See CDC: [Decontamination and Reuse of Filtering Facepiece Respirators](#) 04/05/2020 and University of Nebraska: [N95 Filtering Facepiece Respirator Ultraviolet Germicidal Irradiation \(UVGI\) Process for Decontamination and Reuse](#) 03/26/2020)

- A.** The CDC and NIOSH do not recommend the decontamination and reuse of FFRs but acknowledge the need as a crisis capacity strategy. Based on limited research, ultraviolet germicidal irradiation, vaporous hydrogen peroxide, and moist heat showed the most promise as potential methods to decontaminate FFRs. Autoclaving and the use of disinfectant wipes are not recommended as crisis strategies as they may alter FFRs.

**Can we use expired gowns and surgical masks? Do they offer the protection needed?** (See FDA: [Surgical Mask and Gown Conservation Strategies](#) 04/05/2020)

- A.** These products were designed to serve as protective barriers, and thus FDA believes they may still offer some protection even when they are used beyond the manufacturer's designated shelf life or expiration date. The user should visibly inspect the product prior to use, and if there are concerns (such as degraded materials or visible tears), should discard the product.

**Can we use surgical masks and gowns on more than one procedure?** (See CDC: [Strategies for Optimizing the Supply of Isolation Gowns](#) 03/17/2020)

- A.** In settings of **extreme shortages and surges** of ill patients, CDC recommendations include the following:
- Gowns may be worn to see multiple patients with the same infectious disease diagnosis or exposure when they are maintained in a common area.
  - Gowns may be worn for multiple surgeries where the surgical procedure has a low risk of contamination.
  - In all cases, if the gown becomes contaminated, replace it.
  - Surgical masks may be worn for extended periods (reused) during care for multiple patients where they are used to protect the patient from droplets from the surgeon. If the mask becomes wet or contaminated, replace it.

**Can reusable cloth gowns be used in a shortage?** (See CDC: [Strategies for Optimizing the Supply of Isolation Gowns](#) 03/17/2020)

- A. In surge crisis settings, CDC states that cleared or approved reusable cloth gowns can be used. Adequate laundering, or sterilization if available, can reduce the level of pathogen contamination to a negligible level, thus lowering the overall risk of disease.

**Where can I get more PPE?** (See DSHS: [Information for Hospitals & Healthcare Professionals](#) 04/06/2020)

- A. The Texas Department of State Health Services (DSHS) recommends that hospitals and physicians follow their normal process of trying to locate emergency medical supplies, PPE, and other health care resources with their regular vendors and exhaust all possible options. These options may include contacting any sister facilities for coordination, reaching out to local partners or stakeholders, looking at any possible reallocations within the health care coalition ([Regional Advisory Council](#)) regions, or other medical supply agencies, given established priority groups.

If hospitals and health care professionals cannot obtain any PPE from their vendor(s) and have exhausted all alternative options, DSHS recommends that physicians send their official requests via the STAR process for supplies from the [Strategic National Stockpile](#) (SNS) to their local office of emergency management or [Regional Advisory Council](#), whose role includes distributing SNS supplies. Ensure you provide all relevant details for your request, to include type of item, point of care information, and delivery address. Also note that during times of overwhelming demand and patient surge, these supplies and resources may also be depleted.

**What has been TMA's role in advocating for Texas physicians to obtain PPE?** (See TMA: [Additional PPE Supplies in Texas Allocated, Officials Say](#) 03/23/2020)

- A. TMA, together with county medical and specialty societies, has been in discussions and meetings with DSHS, [Texas Department of Emergency Management](#), and [Regional Advisory Councils](#) to emphasize the need to improve the process for Texas physicians to obtain PPE as more supplies become available. On March 20, 2020, TMA submitted a detailed [letter](#) urging Gov. Greg Abbott and state lawmakers to do everything possible to ensure Texas physicians and other HCP have adequate supplies of PPE during the COVID-19 pandemic.

**For PPE information not addressed in this FAQ, please refer to the following resources.**

[CDC Coronavirus COVID-19 website](#)

[TMA COVID-19 Resource Center](#)

[TMA Infection Control and PPE COVID-19 Resources](#)

[DSHS Coronavirus Disease \(COVID-19\) website](#)

DSHS COVID-19 Call Center at **(877) 570-9779**, seven days a week, 7 am-8 pm

DSHS 24/7 Hotline at **(888) 963-7111**

DSHS email: [coronavirus@dshs.texas.gov](mailto:coronavirus@dshs.texas.gov)

TMA Knowledge Center (800) 880-7955 or [knowledge@texmed.org](mailto:knowledge@texmed.org)

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