



COVID-19 Personal Protective Equipment Prioritization Guidance
Approved by State Disaster Medical Advisory Committee (SDMAC) - 3/23/2020

Situation

- The estimated need for personal protective equipment (PPE) in Arizona for the COVID-19 response is in the tens of millions for a twelve-month period.
 - HHS estimates that the US will need 3.5 billion N95 masks for one year of the outbreak; Arizona's need would be around 74,000,000 N95 masks.
 - Estimates of required medical/surgical masks, eye protection, gowns and gloves are equally large.
- There is currently a worldwide shortage of PPE.
 - Arizona practitioners and healthcare facilities are unable to acquire PPE through their normal vendors (internal communication).
 - Arizona providers and healthcare facilities have requested N95s, medical/surgical masks, gowns and face shields for resupply (internal communication).
 - Arizona has requested supplies from the strategic national stockpile and has begun to receive shipments but the timing and ultimate availability of shipments is unknown at this time.
- There is a concern that without appropriate PPE, there will be increased transmission in healthcare settings, spread to and depletion of the healthcare workforce, and an inability of healthcare facilities to remain open.
- Predictive models of COVID-19 suggest continued spread for the next 12-18 months.

Background on Standards of Care for Surge Capacity

- The CDC has provided a set of guidelines (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html>), to offer strategies to optimize the supply of personal protective equipment when there is a limited supply.
- Three general designations have been used to describe surge capacity and prioritize measures to conserve PPE, shown in the table below.

Conventional	Measures consist of providing patient care without any change in daily contemporary practices. This set of measures, consisting of engineering, administrative, and personal protective equipment (PPE) controls should already be implemented in general infection prevention and control plans in healthcare settings.
Contingency	Measures may change daily standard practices but may not have any significant impact on the care delivered to the patient or the safety of healthcare personnel (HCP). These practices may be used temporarily during periods of expected eye protection shortages.
Crisis	Strategies that 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 eye protection shortages.

- A summary of the standards of care are listed below (adapted from CDC guidelines).

Eye Protection	
Conventional	• Use eye protection according to product labeling and local, state, and federal requirements.
Contingency	<ul style="list-style-type: none"> • Selectively cancel elective and non-urgent procedures and appointments for which eye protection is typically used by healthcare personnel (HCP). • Shift eye protection supplies from disposable to re-usable devices (i.e., goggles and reusable face shields)*. • Implement extended use of eye protection†.
Crisis	<ul style="list-style-type: none"> • Cancel all elective and non-urgent procedures and appointments for which eye protection is typically used by HCP. • Use eye protection devices beyond the manufacturer-designated shelf life during patient care activities‡. • Prioritize eye protection for selected activities such as: <ul style="list-style-type: none"> 1) During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures. 2) During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable • Consider using safety glasses (e.g., trauma glasses) that have extensions to cover the side of the eyes. • Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients§. • Designate convalescent HCP for provision of care to known or suspected COVID-19 patients^.

Isolation Gowns	
Conventional	<ul style="list-style-type: none"> • Use nonsterile, disposable patient isolation gowns • Surgical gowns should be prioritized for surgical and other sterile procedures • Current U.S. guidelines do not require use of gowns that conform to any standards
Contingency	<ul style="list-style-type: none"> • Selectively cancel elective and non-urgent procedures and appointments for which a gown is typically used by HCP. • Shift gown use towards cloth reusable isolation gowns.* • Consider the use of coveralls.† • Use of expired gowns beyond the manufacturer-designated shelf life for training.‡ • Use gowns or coveralls conforming to international standards.§
Crisis	<ul style="list-style-type: none"> • Cancel all elective and non-urgent procedures and appointments for which a gown is typically used by HCP. • Extended use of isolation gowns.^ • Re-use of cloth isolation gowns.¶ • Gowns should be prioritized for the following activities: <ol style="list-style-type: none"> 1) During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures 2) During the following high-contact patient care activities: dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care • Surgical gowns should be prioritized for surgical and other sterile procedures. Facilities may consider suspending use of gowns for endemic multidrug resistant organisms (e.g., MRSA, VRE, ESBL-producing organisms).
No Gowns Available	<ul style="list-style-type: none"> • Consider using gown alternatives that have not been evaluated as effective.‡

Facemasks	
Conventional	<ul style="list-style-type: none"> • Use facemasks according to product labeling and local, state, and federal requirements.
Contingency	<ul style="list-style-type: none"> • Selectively cancel elective and non-urgent procedures and appointments for which a facemask is typically used by HCP. • Remove facemasks for visitors in public areas.* • Implement extended use of facemasks.† • Restrict facemasks to use by HCP, rather than patients for source control. Have patients with symptoms of respiratory infection use tissues or other barriers to cover their mouth and nose.
Crisis	<ul style="list-style-type: none"> • Cancel all elective and non-urgent procedures and appointments for which a facemask is typically used by HCP. • Use facemasks beyond the manufacturer-designated shelf life during patient care activities.‡ • Implement limited re-use of facemasks.§ • Prioritize facemasks for selected activities such as: <ol style="list-style-type: none"> 1) For provision of essential surgeries and procedures 2) During care activities where splashes and sprays are anticipated 3) During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable 4) For performing aerosol generating procedures, if respirators are no longer available
No Facemasks Available	<ul style="list-style-type: none"> • Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients.^ • Designate convalescent HCP for provision of care to known or suspected COVID-19 patients.¶ • Use a face shield that covers the entire front (that extends to the chin or below) and sides of the face with no facemask. • Consider use of expedient patient isolation rooms for risk reduction.‡ • Consider use of ventilated headboards** • HCP use of homemade masks††

N95 Respirators	
Conventional	<ul style="list-style-type: none"> • Isolate patients in an airborne infection isolation room (AIIR) • Use physical barriers such as glass or plastic windows at reception areas, curtains between patients, etc. • Properly maintain ventilation systems to provide air movement from a clean to contaminated flow direction • Limit the number of patients going to hospitals or outpatient settings by screening patients for a acute respiratory illness prior to non-urgent care or elective visits • Exclude all HCP not directly involved in patient care (e.g., dietary, housekeeping employees) • Reduce face-to-face HCP encounters with patients (e.g., bundling activities, use of video monitoring) • Exclude visitors to patients with known or suspected COVID-19 • Implement source control: Identify and assess patients who may be ill with or who may have been exposed to a patient with known COVID-19 and recommend they use facemasks until they can be placed in an AIIR or private room. • Cohort patients: Group together patients who are infected with the same organism to confine their care to one area • Cohort HCP: Assign designated teams of HCP to provide care for all patients with suspected or confirmed COVID-19 • Use telemedicine to screen and manage patients using technologies and referral networks to reduce the influx of patients to healthcare facilities • Train HCP on indications for use of N95 respirators • Train HCP on use of N95 respirators (i.e., proper use, fit, donning and doffing, etc.) • Implement just-in-time fit testing: Plan for larger scale evaluation, training, and fit testing of employees when necessary during a pandemic • Limit respirators during training: Determine which HCP do and do not need to be in a respiratory protection program and, when possible, allow limited re-use of respirators by individual HCP for training and then fit testing • Implement qualitative fit testing to assess adequacy of a respirator fit to minimize destruction of N95 respirator used in fit testing and allow for limited re-use by HCP • Use surgical N95 respirators only for HCP who need protection from both airborne and fluid hazards (e.g., splashes, sprays). If needed but unavailable, use faceshield over standard N95 respirator. • Use alternatives to N95 respirators where feasible (e.g., other disposable filtering facepiece respirators, elastomeric respirators with appropriate filters or cartridges, powered air purifying respirators)
Contingency	<ul style="list-style-type: none"> • Decrease length of hospital stay for medically stable patients with COVID-19 who cannot be discharged to home for social reasons by identifying alternative non-hospital housing • Use N95 respirators beyond the manufacturer-designated shelf life for training and fit testing • Extend the use of N95 respirators by wearing the same N95 for repeated close contact encounters with several different patients, without removing the respirator (i.e., recommended guidance on implementation of extended use*) • Implement re-use* of N95 respirators by one HCP for multiple encounters with different tuberculosis patients, but remove it after each encounter
Crisis	<ul style="list-style-type: none"> • Use respirators as identified by CDC as performing adequately for healthcare delivery beyond the manufacturer-designated shelf life • Use respirators approved under standards used in other countries that are similar to NIOSH-approved N95 respirators but that may not necessarily be NIOSH-approved • Implement limited re-use of N95 respirators for patients with COVID-19, measles, and varicella • Use additional respirators identified by CDC as NOT performing adequately for healthcare delivery beyond the manufacturer-designated shelf life • Prioritize the use of N95 respirators and facemasks by activity type with and without masking symptomatic patients
No N95 Respirators Available	<ul style="list-style-type: none"> • Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients (i.e., those of older age, those with chronic medical conditions, or those who may be pregnant) • Designate convalescent HCP for provision of care to known or suspected COVID-19 patients (those who have clinically recovered from COVID-19 and may have some protective immunity) to preferentially provide care) • Use an expedient patient isolation room for risk-reduction • Use a ventilated headboard to decrease risk of HCP exposure to a patient-generated aerosol

Predictions for Resupply of Personal Protective Equipment

- Production facilities in China are increasing their production capacity. The timing of resupply is unknown.
- Manufacturing facilities in Arizona have reported a potential to increase production of selected personal protective equipment (internal communication). The timing of resupply is unknown.
- The strategic national stockpile and the signed Defense Production Act will likely help with resupplies of personal protective equipment. The timing of resupply is unknown.

Legality of Contingency and Crisis Standards of Care

Legal protections help to assure healthcare practitioners, who act in good faith, will not be held liable for their civil wrongs that cause unintended harms to patients during emergencies:

- Governmental (sovereign) immunity prevents government entities or their political subdivisions (e.g., departments, agencies) from being sued without consent.
- According to the Good Samaritan Act (see ARS §36-2263), persons and entities are not subject to civil liability for any personal injury that results from any act or omission that does not amount to willful misconduct or gross negligence.
- The federal Public Readiness & Emergency Preparedness (PREP) Act provides immunity from liability for any loss caused, arising out of, relating to, or resulting from administration or use of countermeasures for diseases, threats and conditions determined in the Declaration to constitute a present or future credible risk of a public health emergency.
- That federal PREP Act provides tort liability protections for public and private sector employees and entities that manufacture, test, develop, distribute, administer, or use Covered Countermeasures.
- Covered Countermeasures are any drug, biologic, diagnostic, device, or vaccine used to treat, diagnose, cure, prevent, or mitigate COVID-19, or any device used in the administration of any such product.
- The Administration of Covered Countermeasures means the physical provision of the countermeasures to recipients, or activities and decisions directly relating to public and private delivery, distribution and dispensing of the countermeasures to recipients, management and operation of countermeasure programs, or management and operation of locations for purpose of distributing and dispensing countermeasures.

Entity liability protections create incentives for private and nonprofit entities to join with government agencies as they prepare for, and respond to, public health emergencies. Despite these protections, healthcare practitioners must act within the scope of practice allowed them, and not act in a negligent way or commit an intentional tort, an act of misrepresentation, or abandon a patient.

Guidance

SDMAC recommends the following shifts in personal protective equipment usage, in order to preserve and extend the availability of personal protective equipment in the State of Arizona until there is a sufficient resupply:

1. **EYE PROTECTION: SHIFT TO CONTINGENCY; PREPARE FOR CRISIS**
 - **Additional consideration:** None; this practice is likely already occurring and is acceptable to practicing clinicians and facilities.

2. **ISOLATION GOWNS: SHIFT TO CONTINGENCY; PREPARE FOR CRISIS**
 - **Additional consideration:** Organizations may need to create procedures for laundry and donning/doffing as cloth gowns are not routinely used.
 - **Additional consideration:** Some organizations may soon be approaching a crisis standard for gowns.

3. **FACE MASKS: SHIFT TO CONTINGENCY; PREPARE FOR CRISIS**

4. **N95 MASKS: SHIFT TO CONTINGENCY; PREPARE FOR CRISIS**