Aspirus Emergency System Wide Procedure COVID-19

Safe Reuse of N95 Respirator during Emergency Situations

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During pandemic situations, the risk of internal, local and national supply availability may be negatively impacted. Therefore, conservation measures to sustain supply and protect the employee and patient may be implemented.

Supply conservation efforts may be initiated at the earliest when the supply chain manager indicates supply availability reaches the yellow threshold. The stoplight criteria are established by supply chain. Green indicates no product shortages exist and supply availability is meeting current patient demand. Yellow indicates supply shortages are beginning to impact patient care and product availability is becoming limited. Red indicates the identified supply is critically low and replenishment is extremely limited and may not meet the demand.

Engineering and Administrative controls for Conventional Capacity – No change in daily practices

1) Isolate patients in an airborne (negative pressure) infection isolation room (AIIR), if available, per recommendations in the Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings
2) Use physical barriers such as glass or plastic windows at reception areas, curtains between patients, etc.
3) Properly maintain ventilation systems to provide air movement from a clean to contaminated flow direction
4) Limit the number of patients going to hospitals or outpatient settings by screening patients for acute respiratory illness prior to non-urgent care or elective visits.
5) Exclude healthcare personnel not directly involved in patient care from entering the patient room
6) Minimize face to face healthcare personnel encounters with the patient
7) Exclude visitors to patients with known or suspected airborne illness
8) Implement source control: identify and assess patients who may be ill with or who may have been exposed to a patient with the known airborne illness and recommend they use facemasks until they can be placed in an AIIR or private room
9) Cohort patients: group together patients who are infected with the same organism to confine their care to one area
10) Cohort healthcare personnel: assign designated teams of healthcare personnel to provide care for all patients with suspected or confirmed airborne illness
11) Use telemedicine to screen and manage patients using technologies and referral networks to reduce the influx of patients to healthcare facilities.
12) Train healthcare personnel on indications for use of fit tested N95 respirators
13) Train healthcare personnel on use of fit tested N95 respirators (i.e., proper use, fit, donning and doffing, etc.)
14) Implement just in time fit testing: plan for larger scale evaluation, training and fit testing of employees when necessary during a pandemic

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15) Limit respirators during training: determine which healthcare personnel do and do not need to be in a respiratory protection program and, when possible, allow limited re-use of respirators by individual healthcare personnel for training and then fit testing.
16) Implement qualitative fit testing to assess adequacy of a respiratory fit to minimize destruction of N95 respirator used in fit testing and allow for limited re-use by healthcare personnel
17) Use surgical N95 respirator ONLY for healthcare personnel who need protection from both airborne and fluid hazards (e.g., splashes, sprays). If needed but unavailable, use face shield over standard N95 respirator
18) 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)

Engineering and Administrative controls for Contingency Capacity – may have practice changes but not significant impact on patient care or HCW safety

1) Decrease length of hospital stay for medically stable patients with airborne illness who cannot be discharged to home for social reasons by identifying alternative non-hospital housing, if appropriate home environment is not available. If medically stable and have an appropriate home environment, patient may be discharged home.
2) Use fit tested N95 respirators beyond the manufacturer-designated shelf life for training and fit testing.
3) Extend the use of fit tested N95 respirators by wearing the same N95 for repeated close contact encounters with several different patients, without removing the respirator.
4) Implement re-use of fit tested N95 respirators by one healthcare personnel for multiple encounters with different tuberculosis patients but remove it after each encounter.

Crisis/ alternate strategies during periods of expected or known N95 respirator shortage

When N95 supplies are low

1) Use respirators as identified by CDC as performing adequately for healthcare delivery beyond the manufacturer-designated shelf life
2) 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
3) Implement limited re-use of fit tested N95 respirators for patients with COVID-19, measles, and varicella
4) Use additional respirators identified by CDC as NOT performing adequately for healthcare delivery beyond the manufacturer-designated shelf life
5) Prioritize the use of N95 respirators and facemasks by activity type with and without masking symptomatic patients

When no respirators are left

1) Exclude healthcare personnel at higher risk for severe illness from airborne illness from contact with known or suspected airborne illness patients (i.e., those of older age, those with chronic medical conditions, or those who may be pregnant)

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2) Designate convalescent healthcare personnel for provision of care to known or suspected airborne illness patients those who have clinically recovered from the airborne illness and may have some protective immunity to preferentially provide care
3) Use an expedient patient isolation room for risk-reduction
4) Use a ventilated headboard to decrease risk of healthcare personnel exposure to a patient-generated aerosol
5) Personal protective equipment and respiratory protection - Use masks not evaluated or approved by NIOSH or homemade masks as a last resort

Limited Reuse of Fit tested N-95

Re-use refers to the practice of using the same N95 respirator by one HCP for multiple encounters with different patients but removing it (i.e. doffing) after each encounter. It is important to consult with the respirator manufacturer regarding the maximum number of donnings or uses they recommend for the N95 respirator model. If no manufacturer guidance is available, data suggests limiting the number of reuses to no more than five uses per device to ensure an adequate safety margin.

1) Do not share fit tested N95 masks with multiple healthcare personnel
2) Do not reuse N95 respirators after aerosol generating procedures.
3) For tuberculosis prevention, a fit tested respirator classified as disposable can be reused by the same provider if the respirator maintains its structural and functional integrity.
4) Doff the fit tested N95 mask in a manner which minimizes healthcare personnel contamination. Do not touch the mask, doff using the elastic straps.
5) After doffing the fit tested N95 mask, place in a clean, breathable container, such as a paper bag, between uses.
    a. Healthcare personnel should write their name on the container
    b. Do not modify the fit tested N95 mask as it may negatively affect the performance of the respirator and could void the NIOSH approval.
6) Before re-doffing the fit tested N95 mask, the healthcare personnel should check the integrity of the mask. The fit tested N-95 may be reused until it is visibly soiled, torn or damaged, until it becomes moist from condensation of exhaled air, or until the user can no longer get a good fit when doing a fit check.
7) Wear gloves when donning the used respirator and performing the seal check. Remove gloves and clean hands when respirator is sitting comfortably on your face with a good seal.

Extended use of N95 respirators

The decision to implement policies that permit extended use of N95 respirators should be made by the professionals who manage the institution's respiratory protection program, in consultation with their occupational health and infection control departments with input from the state/local public health departments. CDC has recommended guidance on implementation of extended use of N95 respirators in healthcare settings. Extended use has been recommended and widely used as an option for conserving respirators during previous respiratory pathogen outbreaks and pandemics.
Extended use refers to the practice:

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1) Wearing the same N95 respirator for repeated close contact encounters with several different patients, **without** removing the respirator between patient encounters.
2) Extended use is well suited to situations wherein multiple patients with the same infectious disease diagnosis, whose care requires use of a respirator, are cohorted (e.g., housed on the same hospital unit).
3) It can also be considered to be used for care of patients with tuberculosis, varicella, and measles.

Release and use of stockpiled N95 filtering facepiece respirators beyond the manufacturer-designated shelf life

1) N95 manufactured between 2003-2013
2) CDC/NIOSH believes the following products, despite being past their manufacturer-designated shelf life, should provide the expected level of protection to the user if the stockpile conditions have generally been in accordance with the manufacturer-recommended storage conditions and an OSHA-compliant respiratory protection program is used by employers:
    a. 3M 1860
    b. 3M 1870
    c. 3M 8210
    d. 3M 9010
    e. 3M 8000
    f. Gerson 1730
    g. Medline/Alpha Protech NON27501
    h. Moldex 1512
    i. Moldex 2201
3) Firm conclusions cannot be drawn for stockpiled N95 models beyond those tested in this study; however, the 3M 1860S is a smaller version of the 3M 1860, constructed from the same materials, and is expected to perform in the same manner.
4) The 3M 8000 is no longer produced; however, it should still be effective at protecting workers if the straps are intact and there are no visible signs of damage.
5) The Kimberly-Clark 46827 (size small) and Kimberly-Clark 46727 (size regular) may not provide the expected level of protection to the wearer when past their manufacturer-designated shelf life of 5 years.
6) Prior to using these expired respirators, consideration should be given to acquiring other NIOSH-approved respirators including all types of filtering facepiece respirators, elastomeric respirators, or powered air purifying respirators as described in the Strategies for Optimizing the Supply of N95 Respirators.
7) Users should take the following precautionary measures prior to using the respirator in the workplace.
    a. Visually inspect the N95 to determine if its integrity has been compromised.
    b. Check that components such as the straps, nose bridge, and nose foam material did not degrade, which can affect the quality of the fit, and seal and therefore the effectiveness of the respirator.
    c. If the integrity of any part of the respirator is compromised, or if a successful user seal check cannot be performed, discard the respirator and try another respirator.
    d. Users should perform a user seal check immediately after they don each respirator and should not use a respirator on which they cannot perform a successful user seal check.

Removal of Personal Protective Equipment (PPE)

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Use CDC Doffing EXAMPLE 1:

While still in the patient's room:

- Remove your gloves, then CLEAN YOUR HANDS
- Remove the goggles/ face shield
- Remove your gown.
- CLEAN YOUR HANDS

Step out of the patient's room:

- Remove the fit tested N-95 respirator.
- The fit tested N-95 is placed in the paper bag marked with your name.
- The fit tested N-95 may be reused until it is visibly soiled, torn or damaged, until it becomes moist from condensation of exhaled air, or until the user can no longer get a good fit when doing a fit check.
- CLEAN YOUR HANDS

Each business unit will need to determine the storage location for reuse

- Or -

Use CDC Doffing EXAMPLE 2:

While still in the patient's room:

- Grasp front of gown and pull away from body, touching outside with gloved hands
- Peel gloves off as you are removing the gown, then CLEAN YOUR HANDS
- Remove the goggles/ face shield
- CLEAN YOUR HANDS

Step out of the patient's room:

- Remove the fit tested N-95 respirator.
- The fit tested N-95 is placed in the paper bag marked with your name.
- The fit tested N-95 may be reused until it is visibly soiled, torn or damaged, until it becomes moist from condensation of exhaled air, or until the user can no longer get a good fit when doing a fit check.
- CLEAN YOUR HANDS

Each business unit will need to determine the storage location for reuse

Reference:

Strategies for optimizing the supply of N95 respirators, Centers for Disease Control and Prevention (CDC), https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-supply-strategies.html retrieved 3/8/2020

Contingency capacity strategies, Centers for Disease Control and Prevention (CDC), https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/contingency-capacity-strategies.html, retrieved 3/8/2020