




Title: PPE Preservation Protocol		
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1) Background

The supply chain for personal protective equipment (PPE) is inundated with request for the myriad of PPE needed for the response to COVID-19. This has created excessive delays in shipments and ultimately caused the supply for the end user to begin to dwindle. With this becoming ever so apparent to effect York County, a protocol has been developed to ensure that County responders will continue to have the appropriate PPE needed to continue response to all patients in need.

This protocol is intended to provide best practices for preservation of the PPE supply, for the likely scenario of further supplies becoming difficult to attain. It is not intended to place the responders at heightened risk for becoming exposed to COVID-19 nor to decrease the need or limit the guidance for which responders don appropriate PPE.

2) Protocol Specific Definitions

Aerosol Generating Procedure- Any procedure performed on the patient wherein which respiratory particulates may become aerosolized or otherwise airborne and the provider is in close proximity to the patient (less than 6 feet). These may include but are not limited to CPR, BVM ventilation, BIAD insertion, ET intubation, etc.

Fever- Core Body Temperature over 100.4 degrees Fahrenheit

Storage vessel- Container used to store N-95 and other reusable PPE that allows for appropriate airflow and will not allow the development of condensation within the container

3) Considerations

- a) Greatest risk is from contamination by contact and requires extra steps for removal and storage between uses
- b) Estimated tolerance of a single N-95 respirator is limited to a single caregiver for one shift
- c) Unless in a situation of grouped confirmed positive COVID-19 patients, the mask should be specific for 1:1 care
- d) CDC specifies that N-95 respirators should be re-used no more than five (5) times

- e) N-95 respirators should NOT be reused if:
 - i. Contaminated with blood, respiratory or nasal secretions, or other bodily fluids
 - ii. Compromised, obviously damaged, or difficult to breathe through
 - iii. Used in an aerosol generating procedure
- f) In accordance with CDC, OSHA, and other Federal Guidelines, it is requested that N-95 respirators past their designated shelf life NOT be disposed of and have been deemed appropriate for use

4) N-95 Reuse

The PPE Preservation Protocol calls for the re-use of N-95 respirators for multiple patient encounters with removing (doffing) of the N-95 mask and appropriate storage between patient encounters. The N-95 respirator should be stored in a paper bag, or other vessel that allows for air flow and will not promote condensation, and appropriately put on again (donned) prior to the next encounter. This will require a different approach to the donning process but will allow for prolonged preservation of PPE supplies.

- a) Considerations for the Re-Use of N-95 Respirators:
 - i. Ensure each responder has a designated storage vessel with their name or other specific identifier on said bag
 - ii. Assign a PPE Lead who will ensure the storage vessels are properly labeled and stored in a location that allows for appropriate donning and doffing procedures to take place
 - iii. As well, the PPE lead will oversee the amount of times in which the N-95 mask is used and will ensure that responders DO NOT use the mask more than the CDC designated usage
 - iv. Appropriate documentation should be kept of N-95 use and re-use; this should include the users name, date of usage, and number of times the N-95 was used prior to disposal
 - v. Proper hand hygiene is imperative and may be achieved by thoroughly washing hands or the use of a hand sanitizer that is 60% alcohol or higher

- b) Reuse and Disposal Delineation
 - i. COVID-19 testing in the field has not become readily available leading responders to determine the likelihood of a patient being COVID-19 positive by deductive reason in using the patient's current medical complaints in association with their medical history.
 - ii. The practice of treating all patients as though they are infected and disposing of N-95's after each interaction is simply unsustainable. Therefore, further guidance and protocols can help responders determine when it is appropriate to dispose of N-95s or Reuse the respirator.
 - iii. The below criteria outlines when the N-95 should be disposed of or reused:
 - 1. Should the patient meet all of the following criteria, then the N-95 should be disposed of with first use:
 - (a) Fever greater than 100.4 degrees
 - (b) Patient shows signs and symptoms of lower respiratory illness (such as cough and shortness of breath)

- (c) The patient has NO medical history of respiratory or cardiac related disease processes (i.e.-COPD, Emphysema, CHF, Pulmonary Hypertension, A-Fib, etc.)
- (d) An aerosol generating procedure was conducted or attempted
- (e) Any of the above N-95 compromised problems have occurred¹
- 2. Should any of the following occur, the N-95 Respirator may be reused:
 - (a) None of the above Criteria is met
 - (b) The patient has a complaint of shortness of breath or cough and:
 - (i) Is fever free or has a fever below 100.4 degrees
 - (ii) Has a medical history of respiratory or cardiac related disease process:
 - 1. And the chief complaint and patient presentation coincide with said past medical history related complaint
 - (c) Patient has a complaint that is not related to fever, shortness of breath, or cough

5) Donning PPE with New N-95

- a) Perform hand hygiene (thoroughly wash hands)
- b) Don gown (if necessary)
- c) Don N-95 respiratory (if necessary, otherwise use surgical mask)
- d) Don face shield or goggles
- e) Don clean gloves
- f) Perform patient care

6) Doffing PPE

- a) Remove dirty gloves
- b) Perform hand hygiene
- c) Don clean gloves
- d) Disinfect designated surface with approved disinfectant
- e) Place 2 storage vessels (one for the N-95 Respirator and one for face shield or goggles) labeled with responder name on surface
- f) Remove face shield or goggles
- g) Disinfect face shield or goggles with disinfectant and place on clean surface to dry
- h) Remove gloves
- i) Perform hand hygiene
- j) Don clean gloves
- k) Keeping eyes closed, remove N-95 respirator with one hand on face piece and the other on the strap
- l) Place skin contact side down in breathable storage vessel with strap under skin contact side
- m) Remove dirty gloves
- n) Perform hand hygiene
- o) Don clean gloves
- p) Close bag or container
- q) Remove dirty gloves
- r) Perform hand hygiene

¹ See PPE Preservation Protocol Section 3.e.

- s) Don clean gloves
- t) Store dried face shield or goggles skin contact side down in the second storage vessel
- u) Doff and discard gloves (and gown, is necessary)
- v) Perform hand hygiene
- w) Place storage vessels with N-95 and face shield or goggles in designated area ensuring containers do not touch each other
- x) Perform hand hygiene

7) Re-Donning in N-95 Reuse Scenario

- a) Perform hand hygiene
- b) Don clean gloves
- c) Retrieve storage vessel with N-95 respirator
- d) Remove dirty gloves
- e) Perform hand hygiene
- f) Don clean gloves
- g) Don gown
- h) Carefully remove stored N-95 respirator from storage vessel with one gloved hand on external side and the other glove capturing the loop
- i) While holding external side of mask, apply respirator to face
- j) With clean gloved hand loop around head/ears
AVOID TOUCHING FACE WITH DIRTY GLOVE**
- k) Remove dirty gloves
- l) Perform hand hygiene
- m) Don clean gloves
- n) Carefully pinch nose piece and perform self-fit test around sides of respirator
- o) Discard storage vessel
 - i. A new one should be used each time
- p) Remove dirty gloves
- q) Perform hand hygiene
- r) Don clean gloves
- s) Carefully remove stored face shield or goggles from storage vessel
- t) Don face shield or goggles over N-95 respirator, **careful not to touch your face****
- u) Remove dirty gloves
- v) Perform hand hygiene
- w) Don clean gloves
- x) Perform patient care

****If contamination occurs on face/skin, immediately wash area with soap and water**

8) Post Call Actions

- a) Restock from department issued supply, avoid use of ambulance PPE supply to restock
- b) Complete online survey documenting all PPE usage and related information