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TO: All Healthcare Settings

FROM: NYSDOH Bureau of Healthcare Associated Infections (BHAI)

Health Advisory:
Options when Personal Protective Equipment (PPE) is in Short Supply or Not Available

Please distribute immediately to:
Administrators, Infection Preventionists, Medical Directors, and Nursing Directors

Healthcare entities should continue to submit requests for PPE through their local Office of Emergency Management. New York State continues to fulfill requests for PPE, as available. However, NYSDOH has become aware of instances in which healthcare providers, facilities, or practices are using or considering alternative means to manage PPE shortages, such as:

- Use of dubious means to attempt to disinfect N95 respirators or facemasks (e.g. putting them in the dishwasher).
- Use of a ventilator circuit filter attached to a disposable anesthesia facemask and strapped to the face in place of an N95 respirator.
- Use of homemade cloth masks.

If all efforts to obtain PPE through vendors and local Office of Emergency Management are exhausted or unsuccessful, healthcare providers should refer to the CDC guidance entitled "Strategies for Optimizing the Supply of PPE" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html). Conventional, then contingency, then crisis capacity strategies should be used in that order, as feasible. Many of the options from the CDC guidance document are summarized below.

For general guidance on the use of PPE in healthcare settings, please refer to CDC guidance entitled "Healthcare Supply of Personal Protective Equipment" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/healthcare-supply-ppe-index.html).

Facilities and providers need to plan and prepare now for the unavailability of PPE. Facilities and providers implementing crisis strategies should document their inability to follow conventional or contingency strategies and, if possible, develop written protocols that maximize the safety of patients and healthcare personnel (HCP).

Recommendations when PPE is in Short Supply or Not Available

These contingency and crisis recommendations are based on the CDC guidance and assume that conventional capacity strategies are no longer possible. Although they have been listed in priority order, safety evidence is lacking, and facilities may need to deviate based on feasibility.

General

1. The CDC has provided a "PPE Burn Rate Calculator" that can be used to plan and optimize the use of PPE in this public health emergency (https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/burn-calculator.html).
2. If acceptable to the HCP involved, consider preferentially assigning HCP who have recovered from COVID-19 to care for COVID-19 patients. According to the CDC, "[i]ndividuals who have recovered from COVID-19 infection may have developed some protective immunity, but this has not yet been confirmed."
3. If acceptable to the HCP involved, when possible, assign HCP at higher risk of severe COVID-19 disease to care for patients not suspected of having COVID-19.

Eye Protection

1. Implement extended use of eye protection. Wear the same eye protection for multiple patients. Change only when soiled or damaged.
2. Use non-disposable, re-usable goggles or face shields. Using CDC or NYSDOH accepted protocols, clean and disinfect the goggle or face shields between uses.
3. Use non-medical or medical safety glasses ("trauma glasses") that cover the sides of the eyes.
4. Reprocess disposable eye protection for re-use. If there are no manufacturer's instructions, use instructions suggested by CDC:
    a) 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.
    b) Carefully wipe the outside of the face shield or goggles using a wipe or clean cloth saturated with EPA-registered hospital disinfectant solution.
    c) Wipe the outside of face shield or goggles with clean water or alcohol to remove residue.
    d) Fully dry (air dry or use clean absorbent towels).
    e) Remove gloves and perform hand hygiene.
5. For further information, consult the CDC guidance entitled "Strategies for Optimizing the Supply of Eye Protection" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/eye-protection.html).

Gowns

1. Restrict sterile surgical gowns to use during surgeries and sterile procedures.
2. Use coveralls, if available.
3. Use gowns and coveralls approved in other countries.
4. Implement extended use of gowns or coveralls for cohorted patients with COVID-19. Similarly, implement extended use of gowns or coveralls for patients without symptoms of COVID-19. Change gowns or coveralls only when soiled, wet, or after interacting with a patient or resident with other transmissible diagnoses (e.g. *Clostridioides difficile*, targeted multidrug-resistant organisms, *Candida auris*).
5. Use cloth isolation gowns that can be laundered.
6. Re-use gowns with no visible soiling for care of patients with COVID-19.
7. Prioritize gowns for aerosol-generating procedures, activities possibly involving splashes or sprays, high-contact activities, and for the care of patients with non-COVID-19 transmissible diagnoses (e.g. *Clostridioides difficile*, multidrug-resistant organisms, *Candida auris*).
8. Use other items of clothing, such as disposable laboratory coats, cloth patient gowns, cloth laboratory coats, disposable aprons, or combinations thereof.
9. For further information, consult the CDC guidance entitled "Strategies for Optimizing the Supply of Isolation Gowns" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/isolation-gowns.html).

Facemasks

1. Implement extended use of facemasks. Wear the same facemask for multiple patients with confirmed COVID-19 without removing between patients. Change only when soiled, wet, or damaged and per facility-developed policies. Do not touch the facemask.
2. Use expired facemasks.
3. Prioritize facemasks for HCP rather than as source control for patients. Have patients use tissues or similar barriers to cover their mouth and nose.
4. Implement limited re-use of facemasks. Do not touch outer surface of facemask, fold so outer surface is inward, assign to a single HCP, and store in a breathable container between uses. Always perform hand hygiene immediately after touching the facemask.
5. If available, use portable HEPA filters or ventilated headboards to decrease risk to HCP without adequate respiratory protection.
6. Prioritize facemasks for surgeries and sterile procedures, when splashes or sprays are anticipated, with prolonged close contact with a potentially infectious patient, and (if respirators not available) for aerosol-generating procedures or similar procedures with potential for uncontrolled respiratory secretions.
7. Use a face shield covering the entire front and sides of the face.
8. Use of cloth masks or other homemade masks (e.g. bandanas, scarves) for HCP is not recommended. If used, they should be used with a face shield. (See MacIntyre et al. "A cluster randomised trial of cloth masks compared with medical masks in healthcare workers" at https://www.ncbi.nlm.nih.gov/pubmed/25903751.) It is unknown whether cloth masks provide effective source control for infectious patients.
9. For further information, consult the CDC guidance entitled "Strategies for Optimizing the Supply of Facemasks" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/face-masks.html).

N95 Respirators

1. Implement extended use of N95 respirators. Wear the same respirator for multiple patients without removing between patients. Change only when soiled, wet, damaged, or difficult to breathe through. Do not touch the respirator.
2. Implement limited re-use for patients with tuberculosis, for which contact transmission is not a concern. Assign to a single HCP and store in a breathable container between uses.
3. Use expired N95 respirators; refer to CDC guidance entitled "Release of Stockpiled N95 Filtering Facepiece Respirators Beyond the Manufacturer-Designated Shelf Life: Considerations for the COVID-19 Response" (https://www.cdc.gov/coronavirus/2019-ncov/release-stockpiled-N95.html).
4. Use respirators approved in other countries; refer to CDC guidance entitled "Strategies for Optimizing the Supply of N95 Respirators: Crisis/Alternate Strategies" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/crisis-alternate-strategies.html) and Food and Drug Administration (FDA) guidance entitled " Stakeholders for Non-NIOSH-Approved Imported FFRs" (https://www.fda.gov/media/136403/download).
5. Implement limited re-use for patients with COVID-19, if possible with decontamination between uses; refer to FDA guidance entitled "Personal Protective Equipment Emergency Use Authorization" (https://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations#covid19ppe). In addition to the approved method, refer to CDC guidance entitled "Decontamination and Reuse of Filtering Facepiece Respirators using Contingency and Crisis Capacity Strategies" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html). If not decontaminated, an important risk is that virus on the outside of the respirator might be transferred to the wearer's hands leading to transmission to the health

care personnel or other people. It is critical to avoid touching the respirator while worn and during or after doffing and to perform rigorous hand hygiene. Assign to a single HCP and store in a breathable container between uses. For further information, consult the CDC guidance entitled "Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings" (https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html).

6. Prioritize use of N95 respirators to higher risk activities; refer to table entitled "Prioritize the use of N95 respirators and facemasks by activity type" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/crisis-alternate-strategies.html).
7. If available, use portable HEPA filters or ventilated headboards to decrease risk to HCP without adequate respiratory protection.

Notes:

1. *Use facemasks in healthcare settings where N95 respirators are not available or staff are not fit tested. Avoid aerosol-generating procedures.*
2. *When supplies are very low, reserve remaining N95 respirators for high-risk activities, such as aerosol-generating procedures.*
3. *Before resorting to the above contingency and crisis strategies, use conventional strategies such as:*
   - *Use of standard N95 respirators (i.e. non-surgical, non-medical, industrial N95s).*
   - *Use with a face shield if exposure to high velocity splashes or sprays is anticipated.*
   - *Avoid in surgical settings unless no other options exist, then use with a face shield. N95 respirators with an exhalation valve protect the wearer, but do not filter the wearer's breath and therefore do not protect a sterile field.*
   - *For further information, refer to CDC guidance entitled "Use of alternatives to N95 respirators" (https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/conventional-capacity-strategies.html).*

Homemade equipment should not be considered PPE, and the efficacy or possible harm of using such equipment is unknown. Ideally, use of unapproved equipment or experimental methods of disinfection should be limited to use for clinical studies that have been approved by an Institutional Review Board. Studies, such as these, may evaluate ways to expand the safe use of PPE and/or enhance healthcare personnel and patient safety in this crisis situation. However, use of unapproved equipment or experimental methods outside approved studies should be limited to situations in which the immediate lack of PPE is judged to result in safety risks greater than those potentially resulting from using unapproved equipment or methods.

General questions or comments about this advisory can be sent to icp@health.ny.gov.

Additional Information

New York State Department of Health COVID-19 Webpage
https://coronavirus.health.ny.gov/

United States Centers for Disease Control and Prevention COVID-19 Webpage
https://www.cdc.gov/coronavirus/2019-nCoV/index.html