

SPLASH PPE AND PARTICULATE RESPIRATOR USAGE GUIDANCE

(N95, Elastomeric, PAPR, CAPR)¹

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

Crisis Capacity – Adaptive spaces, staff, and supplies are not consistent with usual standards of care, but provide sufficiency of care in the setting of a catastrophic disaster (i.e., provide the best possible care to patients given the circumstances and resources available). Crisis capacity activation constitutes a significant and adjustment to standards of care (Hick et al, 2009).

Contingency Capacity – The spaces, staff, and supplies used are not consistent with daily practices, but provide care to a standard that is functionally equivalent to usual patient care practices. These spaces or practices may be used temporarily during a major mass casualty incident or on a more sustained basis during a disaster (when the demands of the incident exceed community resources)

Conventional Capacity – The spaces, staff, and supplies used are consistent with daily practices within the institution. These spaces and practices are used during a major mass casualty incident that triggers activation of the facility emergency operations plan.

RECOMMENDATIONS	STRATEGY			
<p>General Infection Control Procedures</p> <ol style="list-style-type: none"> 1. Establish procedures for managing ill healthcare personnel (e.g., sick leave policy, work restrictions). 2. Establish procedures for managing and restricting visitors. 3. Establish triage procedures and separate areas for ill and well patients, or utilize telehealth tools. 4. Assign dedicated staff to minimize exposure, limiting the number of staff coming in contact with ill patients 5. Require, when possible, or strongly encourage vaccination of primary personnel and first responders, according to vaccine schedule as recommended for existing circumstances by the CDC and the Advisory Committee for Immunization Practices (ACIP). 6. Seriously consider creation of a registry to reflect the vaccination status of primary personnel and first responders to aid in decisions regarding service assignments. 7. Educate and routinely train all staff regarding use and proper handling of particulate respirators. 8. Maintain good hand hygiene procedures including hand washing with soap and water and/or alcohol based hand sanitizers depending on the current recommendations and wearing gloves. 9. Conduct annual infection prevention training to include hand hygiene, donning and doffing of PPE and fit-testing/training on appropriate use of particulate respirators. 10. Clean/disinfect high-touch surfaces daily with an EPA approved disinfectant effective against the virus/bacteria of concern. Conduct terminal cleaning of the room upon patient discharge. <p>Cache/ Increase Supply Levels²</p> <ol style="list-style-type: none"> 11. Clarify current CDC and OSHA guidelines for respirator use; monitor for updates and recommendations.³ 12. Cache additional supplies of respirators and their functional components (e.g. fit testing supplies, batteries, cartridges, filters, hood, etc.). 	Prepare			
<ol style="list-style-type: none"> 15. Obtain masks and cartridges from alternate sources such as industrial suppliers and companies – welding, manufacturing, etc. – when appropriate. 16. Request resource support from local emergency management for respirators with the knowledge that they may be from different manufacturers. They may not be functional in all situations (i.e. surgical use) and they may require additional fit testing before deployment. 	Substitute			
<p>Decrease Use of Respirators</p> <ol style="list-style-type: none"> 17. Clarify current CDC and OSHA guidelines for respirator use; monitor for updates and recommendations.³ 18. Patients with respiratory symptoms may continue to use the same medical/surgical mask until the mask is no longer usable due to moisture or damage. 	Substitute & Conserve			
<ol style="list-style-type: none"> 19. When Respirators are in short supply, aerosol-generating procedures should only be performed on patients when medically necessary and cannot be postponed. 20. Limit the number of healthcare personnel with patient contact to only those essential for patient care and support, especially during aerosol generating procedures. <ol style="list-style-type: none"> a) Restrict all visitors, utilize technology based resources to facilitate patient and visitor interaction. b) Consider changes in staffing (i.e. unimmunized staff given assignments that would not require significant PPE use) 	Conserve			
<p>Extended Use⁴</p> <ol style="list-style-type: none"> 21. Clarify current CDC and OSHA guidelines for respirator use; monitor for updates and recommendations.³ 22. Policies and recommendations around “extended use” or “re-use” of respirators should include input from occupational health, infection control, infectious disease specialists, state and local public health and any national recommendations around the situation at hand. 23. For N95, consider wearing a loose-fitting barrier that does not interfere with fit or seal (e.g., surgical mask, face shield) over the respirator to extend its use. 24. In general, wearing an N95 respirator over multiple serial patient encounters (while minimizing touching) is favored over removing and re-donning between encounters (i.e. extended use is favored over re-use of N95).⁴ 25. Cleaning and filter replacement procedures and extended use of filters and/or hoods/shields on all other mechanical respirators (i.e. elastomeric respirators, PAPRs, CAPRs etc.) should be done according to manufacturer’s protocols and guidelines.⁴ 	Re-use			

<p>Re-use Respirator After Removal⁴ 26. Clarify current CDC and OSHA guidelines for respirator use; monitor for updates and recommendations. 27. Policies and recommendations around “extended use” or “re-use” of respirators should include input from occupational health, infection control, infectious disease specialists, state and local public health and any national recommendations around the situation at hand. ²</p>	Re-use allocate	Re-		
<p>28. Use and store used respirators (hood, mask, shield) individually in such a way that the physical integrity and efficacy of the respirator will not be compromised.⁴ 29. Label respirator with a user’s name before use to prevent inadvertent use by another individual.⁴ 30. Practice appropriate hand hygiene before and after removal of the respirator and, if necessary and possible, appropriately disinfect the object used to store it. Repeat Hand Hygiene⁴ 31. Respirators should be discarded if visibly damaged or contaminated.⁴ 32. Five (5) is the recommended number of donning of a re-used N95-type respirator.⁴ 33. Consider N95 decontamination with ultraviolet germicidal irradiation (UVGI), or other tested method of decontamination to extend the use of respirators.⁵</p> <p>Re-allocate/ prioritize 34. Respirators use should be prioritized only to those healthcare providers identified as highest risk. 35. Identify medical personnel and caregivers with documented vaccination, immunity after an illness or lower risk of complicated infection to provide direct patient contact without a respirator.</p>	Re-use allocate	Re-		

¹Refers to any device such as N95, elastomeric respirators, Powered Air Purifying respirators (PAPRs), Controlled Air Purifying Respirator (CAPRs) or equivalent. NIOSH approved particulate respirators can be found at: https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/RespSource.html

²CDC: Strategies for Optimizing the Supply of N95 Respirators: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-supply-strategies.html>

³CDC and NIOSH overview of respirators: <https://www.cdc.gov/niosh/topics/respirators/default.html>

⁴“Extended use” is defined as wearing the same respirator for repeated close contact encounters with multiple patients without removing the respirator between patients (e.g. triage area, dedicated waiting rooms or wards, etc). “Reuse” is defined as using the same respirator for multiple encounters but removing it after each encounter. <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>

https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/respsource3respreuse.html

⁵Current research on the decontamination of N95 Respirators: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4699414/pdf/nihms747549.pdf>

<https://academic.oup.com/annweh/article/56/1/92/166111>

<https://academic.oup.com/annweh/article/53/8/815/154763>

