# UW Medicine Personal Protective Equipment (PPE) Conservation and Mitigation Plan

## OVERVIEW

### Objective

To provide guidance on the UW Medicine approach to Personal Protective Equipment (PPE) conservation and mitigation strategies of during times of supply shortages, as determined by UW Medicine Supply Chain (UWM-SC).

### Policy Statement

1. This policy applies to ALL patient encounters where the use of PPE is required (e.g. inpatient, outpatient, emergency services, surgical services, procedure areas, etc.).
2. Each Facility will maintain control of access to all PPE at Medical Stores/Materials Management (MS/MM).
3. PPE will not be worn outside of appropriate indications/policies and will not be removed from facility property, unless used for the care of patients.
4. For patients in infection precautions:
   a. Ensure that care is combined to minimize in and out of patient care spaces/rooms to conserve supply.
   b. Utilize team members outside of patient care spaces to obtain and deliver needed supplies.
5. Items will be identified by UWM-SC based on inventory on hand and reliable supply, per the PPE Substitution- Coordination and Communication Policy.
   a. Items that fall into the above policy will be communicated to the UW Medicine Allocation Committee (UWM-AC).
   b. Level of PPE Capacity will be determined by Allocation Committee and entity representatives will operationalize conservation level in designated timeframe.
   c. Communication to UW Medicine employees, faculty, and trainees will occur as PPE conservation and mitigation strategies change per PPE Substitution – Communication Package Policy.
   d. MS/MM will perform daily inventory of all critical PPE items and report that data to UWM-SC.
   e. Critical items will be secured in a designated and monitored location within MS/MM and on units/departments. Any UW Medicine employee, staff, trainee, student, and staff can request PPE from specific unit/clinic/department if not readily available.
   f. PAR stock of critical items may be reduced for reallocation to units/departments most in need as determined by UWM-AC.
      i. Units/Departments that find that reallocated PAR does not meet clinical demand will provide written request to MS/MM for additional PAR using PPE Request (Attached- HMC).
      ii. The PPE request will be reviewed by MS/MM and will escalate to facility designated Clinical Supply Approver (e.g. Infection Control/Nursing Supervisor/designee) for final approval.
6. Depending on the level of mitigation, the need to limit the number of Healthcare Personnel (HCP) into patient rooms will be enacted.
   a. If possible, the use of hand held devices/telemedicine technology in order to limit the amount of times and persons needing to enter a patient room that requires PPE.
      i. Medical/Non-Medical Students/Non-trainee learners should not see any patients who require PPE.
      ii. Medical/Non-Medical Students/Non-trainee learners should not participate in any OR cases. An exception may be made for sub-interns who are on rotation as a key part of career planning and residency application.
   b. Inpatient/Outpatient Areas:
      i. Considering factors such as daily rounding practices and strategies to reduce PPE utilization.
      ii. Only the Attending or primary APP should see the patient and be reserved for activities that require direct contact. If resident/intern/Fellow need to enter the room, limit number of times in order to preserve PPE supply.
      iii. Number of team members entering the room should be limited to absolute minimum to achieve standard of care.
      iv. Consider transfer of patient to non-resident service
      v. Consult services should determine whether direct patient encounter is necessary for each day. If direct care is needed, then follow guidelines above.
   c. Operating Room/Procedural Areas: Only the attending provider and the minimum number of assistant surgeons are to be in a case.

7. HCP should submit other ways to conserve PPE to their managers/supervisors.

Scope
(Policy Applies to)
This policy applies to All UW Medicine employees, faculty, trainees, students, and staff, particularly those that have direct patient care encounters that require the routine use of PPE.

Definitions

Personal Protective Equipment (PPE): Equipment that is used to protect the user from potentially infectious patient materials, toxic medication, and other potentially dangerous substances used in healthcare. They include, but are not limited to: Facemasks (e.g. with integrated eye protection/surgical masks), Eye Protection (e.g. Face shields, Goggles), Isolation Gowns, Powered Air Purifying Respirators (PAPRs), Controlled Air Purifying Respirators (CAPRs), and N95 respirators. ¹

Conventional Capacity: measures consisting of engineering, administrative, and PPE controls that should already be implemented in general infection prevention and control plans in healthcare settings. ¹
**Contingency Capacity**: measures that may be used temporarily during periods of expected PPE shortages.¹

**Crisis Capacity**: strategies that are not commensurate with U.S. standards of care but may need to be considered during periods of known PPE shortages.¹

**Reuse**: Refers to the practice of using the same PPE for multiple encounters with patients but doffing between each of those encounters. The equipment is safely stored in between patient encounters. Previously used PPE should never be taken outside of patient care areas unless the item is decontaminated or placed in a clean breathable container.²

**Extended Use**: Refers to the practice of wearing the same equipment for repeated encounters with patients without removing the PPE. This approach could be used while seeing multiple patients with confirmed or possible COVID-19.²

**Reprocess**: Refers to the cleaning and disinfection of equipment in order for it to be reused again by multiusers.

**Engineering Controls**: Reduce exposures for HCP by placing a barrier between the hazard and the HCP including patient isolation, using physical barriers, and ventilation systems.

**Administrative Controls**: refer to employer-dictated work practices and policies that reduce or prevent hazardous exposures such as using telemedicine, training staff in PPE use, cohorting patients, cohorting HCP.

**Exclusions**

**References**


**Policy Team (Names & Titles)**

Vanessa A Makarewicz, Manager, Infection Prevention and Control, HMC
Adrienne Schippers, Manager, Infection Prevention and Control, UWMC-ML/UWMC-NW

**GENERAL STANDARDS AND EXPECTATIONS**

Current Level of PPE Capacity per Facility

<table>
<thead>
<tr>
<th>PPE</th>
<th>HMC</th>
<th>UWMC-ML</th>
<th>UWMC-NW</th>
<th>UWNC</th>
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<tbody>
<tr>
<td><strong>General Mitigation Strategies</strong></td>
<td>Mandatory Universal Masking</td>
<td>Mandatory Universal Masking</td>
<td>Mandatory Universal Masking</td>
<td>Mandatory Universal Masking</td>
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</tbody>
</table>
### Facemasks (procedure or surgical)
- Contingency
- Contingency
- Contingency
- Contingency

### Eye Protection - Goggle (flexible or rigid)
- Contingency
- Contingency
- Contingency
- Contingency

### Eye Protection – Full Face shield
- Contingency
- Contingency
- Contingency
- Contingency

### Gowns
- Conventional
- Conventional
- Conventional
- Conventional

### Respirator – N95
- Contingency
- Contingency
- Contingency
- N/A

### Respirator – PAPR Hood
- Contingency
- Contingency
- Contingency
- N/A

### Bouffant
- General Mitigation Strategies
- General Mitigation Strategies
- General Mitigation Strategies
- N/A

### Shoe Cover
- General Mitigation Strategies
- General Mitigation Strategies
- General Mitigation Strategies
- N/A

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**PPE**

**Facemasks: Procedure and Surgical**

**Who Can Use**
- All Healthcare Workers (HCWs)/Staff
  - Providing care or cleaning rooms for Special Droplet/Contact Precautions or Droplet/Contact Precautions, in conjunction with Eye Protection
  - Adherence to Required and Extended Use Masking Policy

**General Mitigation Strategies**
- Required and Extended Use Masking Policy
- PPE supply will be tracked daily
- PPE supplies that are not in use will be secured in designated, monitor location. Facemasks should remain in all designated clinical areas for staff to access (e.g. isolation carts, patient rooms)
- Follow Universal Masking Job Aids/ Videos

**Conventional Capacity**
- Procedure Mask: Single Use
  - Surgical Mask: Single Use

**Contingency Capacity**
- All Facemasks for visitors will be removed from public areas. Masks are to be provided to visitors upon entry into the facility.

  Procedure mask:
  - Single use upon exiting:
    - Droplet/Contact Precaution room
    - Special Droplet/Contact Precaution room
### Crisis Capacity

- All Facemasks for visitors will be removed from public areas. Masks are to be provided to visitors upon entry into the facility.

**Procedure mask:**
- Will be issued start of shift and will be extended use in all care areas and per [Required and Extended Use Masking Policy](https://one.uwmedicine.org/coronavirus/COVID19%20Policy%20Statement%20Library/Personal%20Protective%20Equipment%20(PPE)%20Conservation%20and%20Mitigation%20Plan.pdf)
- Staff must wear a full face shield when entering any of the following precaution rooms:
  - Droplet/Contact Precaution room
  - Special Droplet/Contact Precaution room
  - Airborne/Contact Precaution room

### PPE

**Facemasks:** Procedure and Surgical with integral eye protection

**Who Can Use**
- All Healthcare Workers (HCWs)/Staff
  - Providing care or cleaning rooms for Special Droplet/Contact Precautions or Droplet/Contact Precautions, in conjunction with Eye Protection
  - Splash Risk is present
  - Protect mucous membranes from BBP/OPIM exposure

**General Mitigation Strategies**
- PPE supply will be tracked daily
- PPE supplies that are not in use will be secured in designated, monitor location. Facemasks should remain in all designated clinical areas for staff to access (e.g. isolation carts, patient rooms)

**Conventional Capacity**
- Procedure Mask with Integral Shield: Single Use
- Surgical Mask with Integral Shield: Single Use

**Contingency Capacity**
- All Facemasks for visitors will be removed from public areas. Masks are to be provided to visitors upon entry into the facility.
All masks with integral shields have been used.

Procedure masks with eye protection will be used: Goggles (flexible or rigid) or Full Face Shield are acceptable.
- Follow Eye Protection Mitigation below

Procedure mask:
- Single use upon exiting:
  - Droplet/Contact Precaution room
  - Special Droplet/Contact Precaution room
  - Airborne/Contact Precaution room
- Extended use per Required and Extended Use Masking Policy

**Crisis Capacity**

All Facemasks for visitors will be removed from public areas. Masks are to be provided to visitors upon entry into the facility, as necessary. Patients arriving with their own mask are acceptable, if not with exhalation value.

All masks with integral shields have been used.

Procedure masks with eye protection will be used: Full Face Shield must be used.
- Follow Eye Protection Mitigation below

Procedure mask:
- Will be issued start of shift and will be extended use in all care areas and per Required and Extended Use Masking Policy
- Staff should wear a full face shield when entering any of the following precaution rooms:
  - Droplet/Contact Precaution room
  - Special Droplet/Contact Precaution room
  - Airborne/Contact Precaution room
- Extended use per Required and Extended Use Masking Policy
- Splash Risk is present
- Protect mucous membranes from BBP/OPIM exposure

**General Mitigation Strategies**

- PPE supply will be tracked daily.
- PPE supplies that are not in use will be secured in designated location. Facemasks should remain in all designated clinical areas for staff to access (e.g. isolation carts, patient rooms)

**Conventional Capacity**

- Flexible Goggles: Single Use
- Full Face Shields: Single Use

**Contingency Capacity**

**Goggles:**
- Will be cleaned and reused during each patient interaction, if removed. Exception is made if working in designated Hot Zones and/or cohorted patients zones.
  - HMC Eye Protection Reuse
  - UMWC-ML/UWMC-NW Eye Protection Reuse
- Flexible goggles can be tossed at end of shift and/or retained for multiple shifts, depending on staff preference.
- If the transparent eye shield of the flexible goggles becomes compromised, staff can remove it and replace with a new transparent eye shield from Medical Stores/Materials Management. The plastic band can be retained and used until stretched or compromised.
- Rigid goggles will be cleaned and returned to general use and/or retained by user for multiple shifts.

**Full Face Shields:**
- Will be cleaned and reused during each patient interaction, if removed. Exception is made if working in designated Hot Zones and/or cohorted patients zones.
- Will be tossed at end of shift and/or retained for multiple shifts, depending on staff preference.
  - HMC Eye Protection Reuse
  - UMWC-ML/UWMC-NW Eye Protection Reuse
**PPE**

**Isolation Gowns – Disposable and Fabric**

**Who Can Use**

All Healthcare Workers (HCWs)/Staff
- Providing care or cleaning rooms for infection control precaution patients, per protocol
- Splash Risk is present

**General Mitigation Strategies**

- PPE supply will be tracked daily.
- PPE supplies that are not in use will be secured in designated, monitor location. Facemasks should remain in all designated clinical areas for staff to access (e.g. isolation carts, patient rooms)

**Conventional Capacity**

Single Use

**Contingency Capacity**

Extended use in cohorted patients

**Crisis Capacity**

Various alternative gowns may be used:
- Disposable surgical gowns
- Reusable fabric gowns (via national mask drive)
### PPE

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<thead>
<tr>
<th>N95 Respirators</th>
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<tbody>
<tr>
<td><strong>Who Can Use</strong></td>
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<tr>
<td>All Healthcare Workers (HCWs)/Staff</td>
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<tr>
<td>• Providing care or cleaning rooms for Airborne Respirator or Airborne Respirator/Contact precautions, <em>in conjunction with Eye Protection</em></td>
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<tr>
<td>• Providing care or cleaning rooms during aerosol generative procedures (AGPs), in conjunction with Eye Protection</td>
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<tr>
<td>• Protects airways from Airborne particulate</td>
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<tr>
<td>• Splash Risk is present</td>
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<tr>
<td>• Protect mucous membranes from BBP/OPIM exposure</td>
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| **General Mitigation Strategies** |
| • Minimize number of individuals who need respiratory protection through the preferential use of engineering and administrative controls. |
| • Limit fit testing to employees who will use this type of mask. |
| • Use alternatives to N95 respirators when feasible |
| • Implement practices allowing extended use and/or limited reuse of N95 masks |
| • PPE supply will be tracked daily. |
| • PPE supplies that are not in use will be secured in designated, monitor location. Facemasks should remain in all designated clinical areas for staff to access (e.g. isolation carts, patient rooms) |
| • 3M announced on 3/27/20 that they are no longer manufacturing 1870+, employees in which use this respirator should use PAPR or alternative N95. Employees need to be fit tested for alternative respirators. |

| **Conventional Capacity** |
| Single Use |

| **Contingency Capacity** |
| • N95 masks will be single use and will be reprocessed per N95 reprocessing method. Current reprocessing |
method will be updated on Intranet site (UV-C vs. Hydrogen Peroxide).

- N95 respirators will not be issued outside of designated COVID 19 units/areas or sites identified by Infection Prevention & Control
- If PAPR supply allows, use PAPR hood instead of N95.
- Alternative N95 respirator may be identified as a substitute. Staff must be fit tested if substitute is identified.
- Extended Use of N95 may occur in specific settings
- Follow N95 Respirator Reuse, Extended Use, and Reprocess Protocol at each entity
  - HMC Respirator Reuse, Extended Use, and Reprocess Protocol
  - UMWC-ML/UWMC-NW Respirator Reuse, Extended Use, and Reprocess Protocol

### Crisis Capacity

- N95 masks will be **reused** and will be **reprocessed** per N95 reprocessing method. Current reprocessing method will be updated on Intranet site (UV-C vs. Hydrogen Peroxide).
- Full Face Shield will be worn with extended use N95 respirators.
- N95 respirators will not be issued outside of designated COVID 19 units/areas or sites identified by Infection Prevention & Control
- If PAPR supply allows, use PAPR hood if PAPR supply allows, use PAPR hood instead of N95.
- Alternative N95 respirator may be identified as a substitute. Staff must be fit tested if substitute is identified.
- Follow N95 Respirator Reuse, Extended Use, and Reprocess Protocol at each entity
  - HMC Respirator Reuse, Extended Use, and Reprocess Protocol
  - UMWC-ML/UWMC-NW Respirator Reuse, Extended Use, and Reprocess Protocol

### PPE

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<th>PAPR hoods</th>
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<td>Providing care or cleaning rooms for Airborne Respirator or Airborne Respirator/Contact precautions</td>
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</table>
- Providing care or cleaning rooms during *aerosol generative procedures (AGPs)*, in conjunction with Eye Protection  
- Protects airways from Airborne particulate  
- Splash Risk is present  
- Protect mucous membranes from BBP/OPIM exposure

### General Mitigation Strategies

- Minimize number of individuals who need respiratory protection through the preferential use of engineering and administrative controls.  
- Use alternatives to PAPR when feasible  
- Implement practices allowing extended use and/or limited reuse of N95 masks  
- PPE supply will be tracked daily.  
- PPE supplies that are not in use will be secured in designated, monitor location.

### Conventional Capacity

- Units/Department have own PAR stock of hoods and machines/systems  
- Non-COVID Patients:  
  - HMC: Cleaned locally on designated unit/department and reused  
  - UWMC-ML/UWMC-NW: One time use  
- COVID Patients- All sites: One time use

### Contingency Capacity

- PAPR machine/system distribution is reallocated to areas with highest needs, per Infection Prevention and Control (IPC)  
- Machine/system cleaned locally  
  - Hoods:  
    - Single Use  
    - Are cleaned locally first, collected, and disinfected centrally. Disinfected hoods are redistributed to areas based on needs by Supply Chain  
    - Reuse of same hood for a single patient during shift should be considered.  
- Follow Reuse Protocol:  
  - HMC: [PAPR Hood Reuse Protocol](#)  
  - UWMC-ML/UWMC-NW: [PAPR Hood Reuse Protocol](#)  
- If N95 supply allows, use N95 instead of PAPR  
- Alternative PAPR hoods may be identified as a substitute

### Crisis Capacity

- PAPR machine/system distribution is reallocated to COVID 19 areas only  
- Machine/system cleaned locally  
  - Hoods:  
    - One hood is assigned to staff member at beginning of shift.  
    - Are cleaned locally, reused throughout the shift on multiple patients.
At end of shift, they are collected and disinfected centrally. Disinfected hoods are redistributed to areas based on needs by Supply Chain.

- Follow Reuse Protocol:
- If N95 supply allows, use N95 instead of PAPR
- Alternative PAPR hoods may be identified as a substitute

<table>
<thead>
<tr>
<th>PPE</th>
<th>Disposable Bouffant</th>
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<tbody>
<tr>
<td>Who Can Use</td>
<td>All Healthcare Workers (HCWs)/Staff</td>
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<td></td>
<td>• Providing care or cleaning rooms in Operating Room and/or procedural area.</td>
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<td>• Prevent Surgical Site Infections</td>
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<td>• Central Processing</td>
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<tr>
<th>General Mitigation Strategies</th>
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<tbody>
<tr>
<td>• Minimize number of individuals who need PPE through the preferential use of engineering and administrative controls.</td>
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<tr>
<td>• PPE supply will be tracked daily.</td>
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<tr>
<td>• PPE supplies that are not in use will be secured in designated, monitor location.</td>
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<tr>
<td>• No longer require patients to wear bouffant</td>
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<tr>
<th>Conventional Capacity</th>
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<tr>
<td>Single use within OR/Procedural suite</td>
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<tr>
<th>Contingency Capacity</th>
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<tr>
<td>• Use one bouffant per day</td>
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<tr>
<td>• Disposable bouffant for OR Staff within Splash zone</td>
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<tr>
<td>• Have staff wear one bouffant for entire shift</td>
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<tr>
<td>• Cloth bouffant for all other staff identified needing a head cover</td>
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<table>
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<tr>
<th>Crisis Capacity</th>
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<tbody>
<tr>
<td>• Cloth bouffant for all staff requiring this PPE</td>
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<tr>
<th>PPE</th>
<th>Shoe covers</th>
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<tr>
<td>Who Can Use</td>
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<td></td>
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<tr>
<td></td>
<td>• Providing care or cleaning rooms in Operating Room and/or procedural area.</td>
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</tbody>
</table>
• Prevent BBP/OPIM exposure

General Mitigation Strategies
• Minimize number of individuals who need PPE through the preferential use of engineering and administrative controls.
• PPE supply will be tracked daily.
• PPE supplies that are not in use will be secured in designated, monitor location. Facemasks should remain in all designated clinical areas for staff to access (e.g. isolation carts, patient rooms)
• Remove PPE in areas within the OR that are not near entrances

Conventional Capacity
Single use within OR/Procedural suite

Contingency Capacity
Dedicated shoes with show covers reserved for OR staff within splash zone.

Crisis Capacity
All Staff wear dedicated shoes in OR/Procedural suite area and change into different shoed outside of defined area

Attachments:

HMC SUPPLY CHAIN
- Supplemental PPE Request Form v1.0.pdf

<table>
<thead>
<tr>
<th>Version</th>
<th>Approved By</th>
<th>Revision Date</th>
<th>Description of Change</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PPE allocation committee</td>
<td>07/09/2020</td>
<td>Merging three separate policies into one: • COVID19.014 • COVID19.038 • COVID19.059</td>
<td>Vanessa Makarewicz and Adrienne Schippers</td>
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<tr>
<td>2</td>
<td>UW Medicine Med tech</td>
<td>09/10/2020</td>
<td>Semantic changes to N95 contingency and crisis capacity. Clarification of eye protection capacity.</td>
<td>Vanessa Makarewicz and Adrienne Schippers</td>
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