

Integrated Procedural Platform (IPP)

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IPP PPE Guidelines for COVID 19 Pandemic	V19	12/1/2020	Alik Farber, David McAneny, Jennifer Tseng

The following guidelines provide direction to staff in the IPP on the proper PPE to wear in different situations and describe associated *Enhanced Precautions* that are required to provide safe care.

In the IPP, staff will practice hand hygiene and maintain physical distancing (six feet from the nearest person) when possible.

1. Shoe covers are not required if dedicated perioperative area shoes are worn, unless high amounts of blood, body fluids or irrigation are expected.
2. Double masking is not required.
3. If electrocautery is needed, a surgical smoke evacuation system will be required for patients who are COVID 19 positive or of unknown COVID 19 status. A surgical smoke evacuation system can also be used **when requested** by surgeons in cases where a significant amount of smoke is anticipated.

A. Confirmed COVID 19 Positive or Unknown COVID 19 Status (Emergent Cases) Patients in OR (applies to EVERYONE in the OR room)

1. Double gloves
2. Gown
3. Mask
 - a. N95 mask is required
 - i. N95 should be removed at the end of the case, discarded and replaced with a surgical mask.
 - ii. Staff leaving the room during the case (except to retrieve supplies) need to doff the N95, discard it and upon return to the room don a new N95.
 - b. PAPRs
 - i. If a member of the OR team is unable to wear an N95 (due to reasons of fit testing or special exemption) during a procedure in which its use is indicated, use of a PAPR will be permitted. The use of PAPRs in the OR is not permitted for routine use, due to the risk of a surgical site infection caused by unfiltered exhaust from the device.
 - ii. If PAPRs are worn for the reasons indicated above, care should be taken to direct the blower exhaust away from the sterile field.
 - iii. If prosthetic implants are expected to be used and a PAPR is worn then it is absolutely necessary for the staff member to wear a surgical mask (not N95) under the PAPR.
4. Eye protection
 - a. Face-shield, a mask with a face-shield, or wrap-around protective goggles are required. If loupes are used, then a mask with an eye-shield should be used as well. Glasses alone are not sufficient.
5. Patient Face Mask

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- a. If the patient is extubated in the IPP, a surgical mask will be placed over the patient's mouth and nose for travel through the hallways to the post-operative location.
6. Following extubation, cleaning staff must wear N95 masks, face shields, gowns, and double gloves.
 - a. If staff are not wearing an N95, they must wait 30 minutes prior to entering and terminally cleaning the room.
7. Personnel changes during the case need to be limited to the minimum necessary.

B. Confirmed COVID 19 Negative Patients in OR

1. Single gloves are allowed but double-gloving is encouraged
2. Gown (only for scrubbed staff and those involved in airway management).
3. Mask
 - a. An N95 mask is not to be worn, except as described in 3b.
 - b. During induction of and emergence from general anesthesia, **all staff** present in the OR must wear N95 masks.
 - i. Staff who are not required to be present, or who are not wearing N95 masks will need to leave the room during that time.
 - ii. Staff who leave the room do not need to wait a specified period of time after intubation or extubation before returning to the room.
 - c. Staff wearing N95 masks will wear the **same N95 mask for the duration of the day** unless it becomes soiled or is worn in a room with a confirmed COVID 19 positive patient. If the N95 is doffed, it needs to be placed in a plastic container and may be reused.
4. Eye protection
 - a. A face-shield, a mask with a face-shield, or wrap-around protective goggles are required. If loupes are used, and are not wrap around, then side covers are required; in that case a mask with an eye-shield is not required. Glasses alone are not sufficient.
5. Following extubation, cleaning staff can enter and clean the room without waiting. Cleaning staff are not required to wear N95 masks, face shields, gowns and double gloves.

C. High Risk (Highly Aerosolizing) Cases in OR (Defined in Appendix, Exhibit A)

1. Double gloves
2. Gown
3. Mask
 - a. N95 mask is required
 - b. Staff wearing N95 masks will wear the **same mask for the duration of the day** unless it becomes soiled or is worn in a room with a confirmed COVID 19 positive patient. If the N95 is doffed, it needs to be placed in a plastic container and may be reused.
 - c. PAPRs
 - i. If a member of the OR team is unable to wear an N95 (due to reasons of fit testing or special exemption) during a procedure in which its use is indicated, use of a PAPR will be permitted. The use of PAPRs in the OR is not permitted for routine use, due to the risk of a surgical site infection caused by unfiltered exhaust from the device.

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- ii. If PAPRs are worn for the reasons indicated above, care should be taken to direct the blower exhaust away from the sterile field.
 - iii. If prosthetic implants are expected to be used and a PAPR is worn then it is absolutely necessary for the staff member to wear a surgical mask (not N95) under the PAPR.
4. Eye protection
 - a. Face-shield, a mask with a face-shield, or wrap-around protective goggles are required. If loupes are used, then a mask with an eye-shield should be used as well. Glasses alone are not sufficient.
5. Patient Face Mask
 - a. If the patient is extubated in the IPP a surgical mask will be placed over the patient's mouth and nose for travel through the hallways to the post-operative location
6. Following extubation, cleaning staff must wear N95 masks, face shields, gowns, and double gloves.
 - a. If staff are not wearing an N95, they must wait 30 minutes prior to entering and terminally cleaning the room.
7. Personnel changes during the case need to be limited to the minimum necessary.

D. Endoscopy/Transesophageal Echocardiography

1. Gloves
 - a. COVID 19 negative patients: Single gloves are allowed but double-gloving is encouraged.
 - b. COVID 19 positive patients or unknown COVID 19 status: Double gloving required.
2. Gown
3. Mask
 - a. For **COVID 19 positive** patients
 - i. N95 masks are required for all staff involved in any upper or lower GI endoscopic procedure.
 - ii. Staff leaving the room during the case need to doff the N95 (except to retrieve supplies), discard it and upon return to the room don a new N95.
 - b. For **COVID 19 negative** patients
 - i. N95 masks are **required** for all staff involved in any upper or lower GI endoscopic procedure.
 - c. Staff wearing N95 masks will wear the **same N95 mask for the duration of the day** unless it becomes soiled or is worn in a room with a confirmed COVID 19 positive patient. If the N95 is doffed, it needs to be placed in a plastic container and may be reused for the remainder of the day.
 - d. PAPRs
 - i. If a member of the endoscopy team is unable to wear an N95 (due to reasons of fit testing or special exemption) during a procedure in which its use is indicated, use of a PAPR will be permitted. The use of PAPRs is not recommended for routine cases.
4. Eye protection
 - a. A face-shield, a mask with a face-shield, or wrap-around protective goggles are required.
5. Aeration time

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- a. Additional aeration time is not required between procedures on COVID 19 negative patients. In the event that a procedure is performed on a COVID 19 positive patient, then 30 minutes of aeration time will be required after the procedure (based on 15 air changes/hour in Endoscopy Unit rooms); within this time period, anyone entering the procedure room will require full PPE, including N95 mask. If the room is needed earlier, turnover staff entering the room before 30 minutes will wear full PPE including N95 mask.

E. Interventional Suites (CATH, IR, EP, NEURO IR)

1. Procedures on **COVID 19 positive** patients, those with **unknown** COVID 19 status, or those at **high risk / high-suspicion** will be performed using N95 masks (1 per case), full PPE with double gloving, and face shield, preferably in COVID 19 appropriate room, and as last case of day (when possible) to allow for terminal cleaning.
 - a. Staff leaving the room during the case (except to retrieve supplies) need to doff the N95, discard it and upon return to the room don a new N95.
2. Procedures on **COVID 19 negative** patients will be performed using surgical masks, face shield/eye protection, and usual sterile gowning and gloving.
3. If **general anesthesia** with endotracheal intubation (aerosolizing procedure) is used then during induction of and emergence from general anesthesia, **all staff** present in the room must wear N95 masks.
 - i. Staff who are **not required** to be present or not wearing N95 masks will need to leave the room during that time.
 - ii. Staff who leave the room **do not** need to wait a specified period of time after intubation or extubation before returning to the room.
4. Staff wearing N95 masks will wear the **same mask for the duration of the day** unless it becomes soiled or is worn in a room with a confirmed COVID 19 positive or unknown COVID 19 status patient.
5. Certain low risk interventional procedures in the IPP will proceed without COVID 19 testing (see Exhibit B).

F. Gynecology Procedure Unit (GPU)

1. The anesthesia provider and the rest of team will wear an N95 mask regardless of COVID 19 status. Face shield/eye protection will be worn by all team members, and usual gowning and gloving for the proceduralist.
2. N95 masks used in the GPU are for extended use for the course of day unless damaged or soiled.
3. Procedures on **COVID 19 positive** patients or those at **high risk / high-suspicion** will be performed at the end of the day followed by terminal cleaning. They will be performed with N95 masks (1 per case), full PPE with double gloving and face shield for all team members in the room.

G. IPP Common Areas

1. Non-patient care areas including patient registration, family waiting area, OR locker rooms and staff lounge
 - a. Surgical mask
2. Patient care areas including the pre-op area, and PACU

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- a. When caring for COVID 19 positive or emergent/COVID 19 status unknown patients
 - i. Double gloves
 - ii. Gown
 - iii. Mask
 1. N95 mask is required
 - iv. Eye protection
 1. Face shield or wrap-around protective goggles
- b. When caring for COVID 19 negative patients or not actively engaged in patient care
 - i. Surgical mask

H. PPE for Visitors

1. Existing policy to limit visitors in IPP is to be maintained. No visitors will be allowed except for parents (1 parent per pediatric patient), caretakers (1 per incapacitated patient), and guards (1 or 2 per prisoner as per BMC Prisoner Patient Policy).
2. Patient family members/caretakers/parents/guards
 - a. Patient COVID 19 positive
 - i. Single gloves
 - ii. Gown
 - iii. K95 mask
 - iv. Face shield
 - b. Patient COVID 19 negative
 - i. Surgical mask
3. Medical students, company representatives and observers will follow same PPE guidelines as OR staff
 - a. Medical students will be fit tested for N95 masks.
 - b. Other students will not generally participate in COVID positive patient care.
 - c. Visitors (including company representatives) will be provided with K95 masks. OSHA regulations for respirator fit testing do not apply to visitors. Staff will support visitors with appropriate donning and doffing.

I. Appendices

Exhibit A: List of High Risk (Highly Aerosolizing) Procedures

1. ENT:
 - a. Tympanomastoidectomy
 - b. Lateral temporal bone resection
 - c. Nasopharyngeal scoping
 - d. Direct laryngoscopy/suspension microlaryngoscopy
 - e. Endoscopic sinus surgery
 - f. Tonsillectomy, adenoidectomy
 - g. Maxillectomy
 - h. Mandibulectomy
 - i. Tracheostomy

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2. Neurosurgery:

- a. Transsphenoidal surgery
- b. Anterior skull base surgery
- c. Lateral skull base surgery
- d. Awake craniotomies

3. Cardiothoracic:

- a. Open tracheal surgery
- b. Bronchoscopy (flexible or rigid)
- c. VATS (with lung resection or double lumen tube) including robotic assisted
- d. Thoracotomy
- e. Esophagectomy
- f. Sternotomy
- g. Any case with double lumen tube (i.e., typically use bronchoscope to check tube placement)
- h. Upper endoscopy

4. Orthopedics/Spine:

- a. Orthopedic cases that use drills, reamers or other power equipment (joint replacement, fracture fixation, amputations)
- b. Procedures in which a non-powered saw (i.e., Gigli saw) is used (i.e., amputations) will NOT be considered high risk

5. Colorectal:

- a. Colonoscopy

6. OMFS:

- a. Impacted teeth removal
- b. Wisdom teeth removal
- c. Cleft lip and cleft palate repair
- d. Maxillo/mandibular advancement
- e. ORIF mandible fractures
- f. ORIF mid face fractures

Exhibit B: Low Risk Procedures that will not require pre-procedural COVID 19 testing

1. PICC lines
2. Pain management procedures
3. Paracentesis, Thoracentesis
4. Port or tunneled catheter removal

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Exhibit C: IPP PPE Guidelines Grid

IPP PPE Guidelines

Location	COVID Status	Gloves (1 set)	Gloves (2 sets)	Gown	Shoe Covers	N95*	Surgical Mask	Eye Protection
OR or Anteroom	<i>Covid Positive, High Risk or Unknown COVID Status</i>		X	X		X		X
	<i>Covid Negative</i>	X		X**			X	X
Staff Lounge and Locker Rooms	<i>n/a</i>						X	
Pre-op Area and PACU	<i>Covid Positive, High Risk or Unknown COVID Status</i>		X	X		X		X
	<i>COVID Negative</i>						X	
Visitors***	<i>Covid Positive, High Risk or Unknown COVID Status</i>	X		X		X		X
	<i>Covid Negative</i>						X	

*N95 need to be worn by everyone in the OR during induction/extubation regardless of COVID status

**Except unscrubbed staff

***Company Representatives/Observers will follow same PPE guidelines as OR Staff

Exhibit D: OR Donning/Doffing Step-by-Step Instructions

Donning PPE

- 1. Hand sanitize**
- 2. Put on disposable head cover (cover cloth hats)**
- 3. Put on booties/shoe covers (optional)**
- 4. Hand sanitize**
- 5. Put on inner gloves**
- 6. Put on PPE gown**
- 7. Put on outer gloves**
- 8. Put on N95 mask (top strap first) then mold**
- 9. Hand Sanitize**
- 10. Put on Surgical face shield**

Donning PPE

(Scrubbed personnel – back table open)

- 1. Hand sanitize**
- 2. Put on disposable head cover (cover cloth hats)**
- 3. Put on booties/shoe covers (optional)**
- 4. Hand sanitize**
- 5. Put on N95 mask (top strap first) then mold**
- 6. Hand sanitize**
- 7. Put on surgical face shield (or PAPR)**
- 8. Enter OR room for Universal Protocol**
- 9. Exiting room to perform surgical scrub**
- 10. Re-Enter room **Behind the Red Line****
- 11. Gown and double glove as usual**

Doffing

BEHIND THE RED LINE (6' away from patient)

1. **Sanitize outer gloves**
2. **Remove Booties/Shoe covers → trash**
3. **Wipe shoes on treated mat/towel**
4. **Remove outer gloves → trash**
5. **Remove PPE gown – rolling away → trash**
6. **Sanitize inner gloves**
7. **Remove face shield** a) **Disposable → trash**
b) **Reusable - wipe w/2 wipes**
8. **Sanitize inner gloves**
9. **Remove inner gloves**
10. **Hand sanitize**
11. **Exit room**
12. **Hand Sanitize**
13. **Put on new pair of gloves**
14. **Remove N95 – bottom strap first → Recycle Bin**
15. **Remove head covering → trash**
16. **Remove gloves**

Wash hands with Soap & Water for at least 20 seconds

Change Scrubs!!!!