**Personal Protective Equipment Guidance for Care of Suspected (PUI) or Confirmed COVID-19 Patients Undergoing Surgery, Interventional Procedures, and Endoscopy, Including Anesthesia Care**

**Rationale:** Safety of our healthcare workers at Rush is our highest priority. The best available evidence suggests that COVID-19 is primarily transmitted by droplet/contact routes, and that airborne transmission during patient care is rare.[1] Thus, standard/droplet/contact precautions with eye protection are sufficient for routine COVID-19 patient care. For procedures that potentially generate aerosols (e.g., intubation/extubation, nebulizer treatment) we agree with CDC guidance for airborne/droplet/contact with eye protection.

**Definitions:**

Facemask = Generally refers to a procedure (mask with ear loops) OR surgical (mask with ties) mask.

Respirator = a mask that filters airborne particles. Includes: N95 = fitted respirator, PAPR = powered air purifying respirator, CAPR = MAXAIR® Controlled Air Purifying Respirator.

**RECOMMENDATIONS:**

**Identifying Surgical Patients who are Suspected or Confirmed COVID-19**

1. Patients are screened prior to surgery at the point of entry to RUMC for subjective fever, cough, or shortness of breath. Any positive screening symptom precludes movement of the patient from the point of entry to the surgical or other procedural area and triggers evaluation for COVID-19 (PUI).

2. Inpatients at RUMC who are suspected or confirmed COVID-19 are indicated in the Epic banner.

3. For COVID-19 known or suspected OR cases, call infection control prior to surgery for additional consultation.

4. Some surgical services (e.g., ENT) that are performing high risk aerosolizing procedures of the nasal, oral, or respiratory tract may elect to screen asymptomatic patients for COVID-19 shedding using a nasopharyngeal or oropharyngeal PCR test performed within 3 days prior to surgery; in addition, the patient is asked to quarantine between the time of test and day of surgery. Note that a single pre-op negative test does not completely rule out COVID-19 infection and testing is probably not necessary if routine airborne precautions (e.g., N95 respirator) listed in this guideline are implemented for high risk procedures defined as aerosolizing procedures of the nasal, oral, or respiratory tract.

**Aerosol-Generating Procedures (including Intubation/Extubation)**

1. For aerosol-generating procedures involving the nasal, oral, or respiratory tract of any patient regardless of COVID-19 status, if COVID-19 prevalence is high in the community leading to risk of asymptomatic shedding, we recommend the following PPE for all healthcare workers in the room: **N95 respirator + face shield or goggles + gown/gloves**. AIIR (negative pressure) room is not required. The minimum number of healthcare workers necessary for patient care should be present during these procedures.

2. Time needed to clear procedure room of airborne pathogens for intubation/extubation

    a. Healthcare workers with standard precautions that include facemask may remain in the room during intubation/extubation procedure if maintaining a 6 foot distance from the patient's head. Once the intubation/extubation procedure is completed, healthcare workers with standard precautions that include facemask may move about in the procedure room without restriction.

**Procedures that are Non-Aerosol Generating**

1. If patient is known or suspected COVID-19 positive, and the patient is not undergoing an aerosol-generating procedure of the nasal, oral, or respiratory tract, all healthcare workers in the room should wear recommended PPE for routine COVID-19 care (standard/droplet/contact/eye protection): surgical mask, face shield or goggles, gown/gloves.

2. For patients who are *not* considered known or suspected COVID-19, and the patient is not undergoing an aerosol-generating procedure of the nasal, oral, or respiratory tract (e.g., abdominal surgery), use standard surgical precautions.

**Transport of Patients to and from the Operating Room and Procedural Areas**

1. Patients with suspected/confirmed COVID-19 can be transported per current RUMC guidelines: **Patient wears a facemask and the transporter wears facemask and gloves**. If the transporter anticipates close patient contact (e.g., moving a patient to bed) then contact precautions gown should be added.

2. For transport of suspected/confirmed COVID-19 patients, the transporter should wear an N95 respirator instead of a facemask if the patient requires potential aerosol-generating respiratory care during transport to procedure room (e.g., high flow oxygen) or if the transporter is also the person performing an aerosol-generating procedure upon arrival to

procedure room (e.g., intubation). COVID patients who need routine (non-high flow) facemask oxygen therapy during transport can be transported with facemask for the transporter. For intubated patients requiring transport, from infection control standpoint, either transport ventilator or ambu-bag with filter are equally acceptable and can be considered non-aerosol forms of ventilation.

**Preserving Availability of PPE, Including Extended Use**

1. Rush allows extended use and resuse of PPE in the setting of limited PPE supply. **As long as not visibly soiled, the same N95 respirator or facemask should be worn during the care of multiple patients, including care that includes aerosolizing procedures.** Note: if an N95 respirator is worn during the care of a COVID suspect/proven patient, the respirator should not be re-used. Otherwise, the guidance is for 1 N95 respirator or facemask per shift, unless visibly soiled. Use hand hygiene before and after removing the respirator or facemask and keep the respirator or facemask on a clean surface (e.g., paper towel) or in a clean breathable container (e.g., paper bag) when not in use. Please refer to current Rush policy for extended use and reuse on the Rush COVID-19 website.

2. PPE should be kept in a secure location that is accessible to staff who need it. At RUMC, current protocol is to have OR charge nurse be responsible for the supply of PPE at 5$^{th}$ floor Tower, for use when confirmed or suspected (PUI) COVID-19 patients require surgery or interventional procedures. Supply chain to resupply all PPE (**N95 respirator + face shield or goggles + disposable gown/gloves)**. During regular working hours the Anesthesia Clinical Coordinator (and after hours and weekends the Attending Anesthesiologist on-call ) will verify the clinical need for use of PPE by anesthesia staff.

**Miscellaneous Comments**

1. Instructional videos for donning PPE (N95) can be found on the Rush clinical resources page.

2. Strict adherence to hand hygiene is critical to prevent acquisition of COVID-19.

3. Zimmer surgical helmets (or equivalent) do not provide airborne protection, as no HEPA filter is present on air intake. They provide droplet protection only.

4. N95 respirator masks and CAPR provide equivalent airborne/ aerosol protection. However, CAPRs should not be used during procedures involving a sterile field. **Personnel should remove**

**facial hair from portion of the face contacting the respirator (as it prevents proper fit of an N95 respirator).**

## Reference

1. Ng K, Poon BH, Kiat Puar TH, et al. COVID-19 and the Risk to Health Care Workers: A Case Report. *Annals of internal medicine.* 2020.