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

Main Updates From Prior Version
1. For COVID-19 positive or unknown patients, we have included N95 as an option for surgical team and room staff, as an alternative to droplet precautions (See Table). 2. Clarified extended use/reuse of facemasks and respirators. New PPE should be worn for sterile procedures. N95s should be discarded after aerosol generating procedures involving COVID patient. In all other situations, facemasks/respirators may be extended and reused per Rush policy.

Summary Table of Mask/Respirator and Eye Protection Guidance

High-Risk Aerosol-Generating Procedure[a]?	COVID-19 PUI or Confirmed?	During Procedure		During Intubation/Extubation	
		Surgical Team	Other room staff	Anesthesia Team	Other room staff[b]
+	+ / -	N95/eye[c]	N95/eye	N95/eye	N95/eye
-	+ / ? [d]	[Droplet or N95] + eye	[Droplet or N95] + eye	N95/eye	N95/eye
	-	Standard	Standard	N95/eye	N95/eye[e]

Notes. A. An aerosol-generating procedure involving the nasal, oral, or respiratory tract (e.g., ENT surgery). B. Applies to room staff during intubation/extubation procedure; minimize staff in room during intubation/extubation. C. N95 refers to N95 respirator. Eye protection refers to face shield or goggles. D. In situations where COVID-19 status of patient cannot be assessed (e.g., obtunded patient), procedure/room staff may consider [droplet or N95] + eye protection during procedure. E. In this low risk category (COVID-19 not suspected), staff may choose to use Standard precautions (surgical mask/no eye protection) if ≥6 feet from patient's head or during emergent situations (e.g., restraining a patient during an extubation event).

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.[1,2] 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, shortness of breath, sore throat, body aches, or new loss of taste/smell. See Rush testing guidance for up-to-date symptom triggers. 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 ("PUI") or confirmed COVID-19 ("COVID-19" or "Presumptive COVID-19") are indicated in the Epic banner.

3. For PPE or isolation related questions concerning COVID-19 known or suspected OR cases, consult **Infection Control** prior to surgery at pager 7424.

4. For clinical and testing questions concerning COVID-19 known or suspected OR cases, consult **Infectious Disease** prior to surgery at pager 9377.

5. Per Illinois Department of Public Health guidance, pre-op COVID-19 testing will be performed for elective surgery patients and for high risk aerosol generating procedures of the upper airway/gastrointestinal tract. Qualifying procedures and testing protocols are defined through the Rush Command Center and may evolve over time .

Aerosol-Generating Procedures

1. For aerosol-generating procedures (including intubation and extubation) 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 during the procedure: **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. Gown/gloves must be doffed and hand hygiene must be performed prior to exiting the OR into the sterile core.

2. During low-risk intubation/extubation procedures (COVID-19 not suspected in patient), staff may choose to use Standard precautions (surgical mask/no eye protection) if ≥6 feet from patient's head or during emergent situations (e.g., assisting anesthesiologist during an extubation event).

Non-Aerosol Generating Procedures

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 during the procedure should wear recommended PPE for routine COVID-19 care (standard/droplet/contact/eye protection): **surgical mask or N95 respirator, face shield or goggles, gown/gloves.** This category also applies to patients in whom COVID-19 status cannot be reliably assessed (e.g., during an emergent procedure or patient unable to provide history).

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 is encouraging extended use of PPE in order to conserve our PPE supply. **As long as not visibly soiled, the same N95 respirator or facemask may be worn during the care of multiple patients (extended use for all masks; N95s prioritized for re-use).** [Exceptions: Use new PPE for performing

sterile procedures. Furthermore, for the surgeries/procedures, if an N95 respirator is worn for an aerosol-generating procedure for the care of a *COVID suspect/proven patient*, the respirator should discarded and not extended/reused for another patient.] Please refer to current Rush policy for extended use and re-use on the Rush COVID-19 website for further details.

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 5th 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 and eye protection only.

4. N95 respirator masks and CAPR provide equivalent airborne/ aerosol protection. CAPRs may be used during procedures involving a sterile field as long as the provider is wearing a surgical mask underneath. **Personnel should remove facial hair from portion of the face contacting the respirator (as it prevents proper fit of an N95 respirator). If personnel fail fit testing, they should request a CAPR.**

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.
2. Ghinai I, McPherson TD, Hunter JC, et al. First known person-to-person transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the USA. *The Lancet.* 2020.