

MEMORANDUM

FROM: K. Pallav Kolli, MD, Associate Chair, Quality & Safety
Christopher P. Hess, MD, PhD, Professor and Chair

DATE: March 31, 2020

SUBJECT: COVID-19 Interim Guidance: Image-guided procedures and diagnostic imaging under anesthesia

- 1. Surgical Mask Policy.** Effective immediately, all patients undergoing diagnostic imaging or image-guided procedures will be required to wear a surgical mask. This is consistent with UCSF's universal surgical mask [policy](#) published on March 27, 2020.
- 2. Patient Screening.** We will soon ask all procedural teams to perform a final COVID-19 screening of ambulatory patients undergoing image-guided interventions. Ideally, this should occur during the informed consent discussion. We will communicate additional guidance when the implementation plan is finalized.
- 3. Personal protective equipment (PPE) use and radiology resource management in patients undergoing general anesthesia or aerosol-generating procedures.** The UCSF Department of Anesthesia and Perioperative Care released a [policy](#) on March 26, 2020 outlining the appropriate use of PPE in the perioperative setting in asymptomatic patients. Key concepts underpinning this policy include: 1) asymptomatic patients may be sources of SARS-CoV2 disease transmission, 2) disease transmission may occur by aerosol inhalation in addition to droplet spread, 3) certain surgeries carry higher risk than others for disease transmission to healthcare workers due to aerosolization of virus, and 4) intubation, extubation, and certain forms of respiratory support are aerosol-generating. Additionally, the Society of Interventional Radiology published a [clinical notification](#) listing procedures performed by radiologists that should be considered aerosol-generating (Table 3 below).

The Anesthesia and Perioperative Care policy and SIR clinical notification have large downstream effects in our department and elsewhere. **Guidance on use of PPE and management of radiology imaging suites outlined in Tables 1 and 2 should be followed, effective immediately.**

We are taking this step immediately to align our clinical practice with local and national guidelines. This represents a conservative plan to protect our patients and our workforce. **However, it is highly probable that the steps being taken now will be modified in coming days, weeks, and months.** There is scientific uncertainty surrounding the first 3 out of the 4 concepts underpinning the Anesthesia and Perioperative Care policy. There is debate as to what exactly constitutes an aerosol-generating procedure. There continue to be supply chain disruptions affecting the availability of PPE. Finally, the air exchange rates in radiology locations are currently unknown but are expected to be lower than those in operating theatres (operating theatres typically have the fastest air exchange rates in hospitals). We are thus implementing very conservative 1 hour resource downtimes in certain scenarios. This introduces operational inefficiency that may prove quite difficult in coming weeks and months. We are actively investigating air exchange rates in radiology locations and hope to decrease resource downtimes accordingly.

As we take these conservative steps, we ask that you please follow institutional [guidelines](#) on safe re-use of PPE.

Table 1: PPE and Radiology Resource Guidance for Adult Patients at Parnassus and Mission Bay

Scenario	Anesthesia PPE	Radiology Personnel PPE	Room Management	Room Cleaning
1. COVID-19 Positive/PUI for ANY image-guided intervention (diagnostic imaging will continue to follow existing guidelines)	<ul style="list-style-type: none"> Reusable N95 + face shield/goggles or PAPR, Gown Double Gloves 	<ul style="list-style-type: none"> Reusable N95 + face shield/goggles or PAPR Gown Double Gloves 	<ul style="list-style-type: none"> Minimize number of providers present, no radiology trainees to be present Last case of day Room downtime 1 hour after patient departure 	<ul style="list-style-type: none"> Technologist cleans equipment after 1 hour Terminal clean
2. Asymptomatic patient for HIGH RISK procedure (aerosol-generating*) under local anesthetic, conscious sedation, or general anesthesia	<ul style="list-style-type: none"> Reusable N95 + face shield/goggles or PAPR Gown Double Gloves 	<ul style="list-style-type: none"> Reusable N95 + face shield/goggles or PAPR Gown Double Gloves 	<ul style="list-style-type: none"> Minimize number of providers present Room downtime 1 hour after patient departure+ 	<ul style="list-style-type: none"> Routine cleaning
3a. Asymptomatic patient for LOW RISK procedure (non-aerosol-generating) or diagnostic imaging involving general anesthesia, intubation/extubation take place in imaging suite	<ul style="list-style-type: none"> Reusable N95 + face shield/goggles or PAPR Gown Double Gloves 	<ul style="list-style-type: none"> Reusable N95 + face shield/goggles or PAPR Gown Double Gloves 	<ul style="list-style-type: none"> Non-anesthesia personnel should leave room for intubation and extubation Providers may enter room wearing PPE after intubation Room downtime 1 hour after patient departure+ 	<ul style="list-style-type: none"> Routine cleaning
3b. Asymptomatic patient for LOW RISK procedure (non-aerosol-generating) or diagnostic imaging involving general anesthesia, intubation/extubation take place elsewhere and patient is transported to/from imaging suite	<ul style="list-style-type: none"> Reusable N95 + face shield/goggles or PAPR Gown Double Gloves 	<ul style="list-style-type: none"> Standard procedural PPE 	<ul style="list-style-type: none"> No special room downtime 	<ul style="list-style-type: none"> Routine cleaning
4. Asymptomatic patient for LOW RISK (non-aerosol-generating) procedure under local anesthetic, conscious sedation, or monitored anesthesia care	<ul style="list-style-type: none"> Standard procedural PPE 	<ul style="list-style-type: none"> Standard procedural PPE Conscious sedation/MAC: if airway rescue is necessary, support patient and transition to #3a PPE instruction 	<ul style="list-style-type: none"> No special room downtime 	<ul style="list-style-type: none"> Routine cleaning

Table 2: PPE and Radiology Resource Guidance for Pediatric Patients at BCHSF

Scenario	Anesthesia PPE	Radiology Personnel PPE	Room Management and Cleaning	Room Cleaning
1. COVID-19 Positive/PUI for ANY image-guided intervention (diagnostic imaging will continue to follow existing guidelines)	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR, • Gown • Double Gloves 	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • Minimize number of providers present, no radiology trainees to be present • Last case of day • Room downtime 1 hour after patient departure 	<ul style="list-style-type: none"> • Technologist cleans equipment after 1 hour • Terminal clean
2. Asymptomatic patient for HIGH RISK procedure (aerosol-generating*) under local anesthetic, conscious sedation, or general anesthesia	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • Minimize number of providers present • Room downtime 1 hour after patient departure+ 	<ul style="list-style-type: none"> • Routine cleaning
3a. Asymptomatic patient for LOW RISK procedure (non-aerosol-generating) or diagnostic imaging involving general anesthesia, intubation/extubation take place in imaging suite	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • Non-anesthesia personnel should leave room for intubation/extubation • Providers may enter room wearing PPE after intubation • Room downtime 1 hour after patient departure+ 	<ul style="list-style-type: none"> • Routine cleaning
3b. Asymptomatic patient for LOW RISK procedure (non-aerosol-generating) or diagnostic imaging involving general anesthesia, intubation/extubation take place elsewhere and patient is transported to/from imaging suite	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • Standard procedural PPE 	<ul style="list-style-type: none"> • No special room downtime 	<ul style="list-style-type: none"> • Routine cleaning
4. Asymptomatic patient for LOW RISK (non-aerosol-generating) procedure with LMA or mask and spontaneous ventilation	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • Reusable N95 + face shield/goggles or PAPR • Gown • Double Gloves 	<ul style="list-style-type: none"> • No special room downtime • Anesthesia providers will provide guidance if deviation from PPE or room downtime guidance is necessary 	<ul style="list-style-type: none"> • Routine cleaning

***Table 3: Aerosol-generating procedures performed by radiologists**

Any procedure involving a patient who:	Any procedure that may induce coughing:
<ul style="list-style-type: none"> • requires intubation/extubation • is receiving a form of ventilatory support associated with the risk of mechanical dispersal of aerosols* • requires active airway suctioning (i.e. tracheostomy patient) <p>*Note: Any patient undergoing sedation may require airway rescue, which would require utilization of aerosol precautions.</p>	<ul style="list-style-type: none"> • Lung biopsy • Lung ablation • Thoracentesis • Pleural drains • Chest tube for pneumothorax • Bronchial artery embolization • Bronchial stenting • Nasogastric Tube (NG tube) or Orogastic tube (OG tube) placement • Any procedure that requires NG tube placement: • Gastrostomy • Gastro-jejunostomy tube placement • Jejunostomy • GI stent placement

<https://www.sirweb.org/practice-resources/covid-19-resources/covid-19-clinical-notification-3-26-20/>

+Room Downtime

- Room downtime for asymptomatic patients in body and neurointerventional radiology (8, 9, 4, Z, S, & Q) at Parnassus is 30 minutes based on available air exchange data
- Room downtime for asymptomatic patients in body and neurointerventional radiology at Mission Bay (IR Hybrid/OR23, IR/OR24) is 15 minutes based on available air exchange data
- Air exchange data is not available for the remainder of imaging suites yet. Room downtime may change based on incorporation of air exchange data, further discussion of aerosol-generating procedure classification, and the startpoint for room downtime (end of aerosol-generating portion of case versus patient departure)
- **Room downtime for COVID-19 Positive/PUI patients is 1 hour regardless of site**