

## **Guidance for Image-Guided Procedures and Diagnostic Imaging under Anesthesia During the COVID-19 Pandemic**

**Approved:** 4/24/20

**Revision:** 5/7/20 – revised timing of COVID-19 testing for inpatients, Tables 1-4

**Last Revision:** 8/9/20 – revised timing of COVID-19 testing for asymptomatic pediatric patients, updated permissive use of N95s/PAPRs for aerosol-generating procedures in patients with negative tests, addition of COVID-19 (exposed) flag to guidance

**Background:** This document provides guidance for the management of patients and facilities during image-guided interventions and diagnostic imaging performed under anesthesia in the Department of Radiology and Biomedical Imaging. This document represents an update to prior guidance published 5/7/20 and maintains alignment with anesthesia and perioperative practice at UCSF and national standards.

Several important concepts underpin these guidelines. These include: 1) asymptomatic patients may be sources of SARS-CoV-2 disease transmission, 2) disease transmission may occur by aerosol inhalation in addition to droplet spread, 3) certain surgeries and procedures 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. General information to be familiar with and new updates include:

- **COVID-19 PCR test results:** Based on current estimates of COVID-19 prevalence among asymptomatic patients in San Francisco and surrounding areas and the performance of the UCSF RT-PCR test, the likelihood is very high that a patient with a negative test result does not have COVID-19 infection (~99.7% negative predictive value) (see Appendix A).

Whenever possible patients scheduled to undergo anesthesia and selected patients scheduled to undergo specific image-guided interventions under local anesthetic or conscious sedation are tested prior to these visits, either as inpatients or through the UCSF CATCH program for outpatients. **This document updates the time frame over which those tests are considered valid prior to anesthesia or an aerosol-generating image-guided procedure in PEDIATRIC patients, based on changes in the UCSF Benioff Children's Hospital guidance.**

Ideally, guidance in Tables 1 is applicable to the vast majority of aerosol-generating image-guided procedures and diagnostic imaging under anesthesia. However Tables 2 and 3 provide guidance for situations where an applicable COVID-19 PCR test is not available in adult and pediatric patients, respectively.




- **Room-Specific Downtimes:** One hour room downtimes are required for imaging suites where image-guided interventions or diagnostic imaging performed under anesthesia is performed on patients with COVID-19 APEX chart flags. For asymptomatic patients where aerosol generation is expected (intubation/extubation, certain procedures) and for whom recent COVID-19 PCR tests are not available, room-specific air exchange data has been used to determine room-specific imaging suite downtimes (Appendix B).

- Personal Protective Equipment (PPE) guidance for patients with recent negative COVID-19 PCR Tests undergoing diagnostic imaging under anesthesia or aerosol-generating image-guided procedures: Previous guidance recommended the use of standard procedural PPE when caring for patients with applicable recent negative COVID-19 PCR tests. This guidance is now updated to allow providers to alternatively choose to use N95 + eye protection (or PAPRs) for diagnostic imaging under anesthesia or aerosol-generating image-guided procedures. When choosing PPE in this scenario, healthcare workers (HCWs) should take into account:
  1. The low likelihood that a patient with an applicable recent test will subsequently be diagnosed with COVID-19 in a timeframe that constitutes their encounter an exposure, AND
  2. If this scenario occurs, HCWs involved in the patient's care who chose to use N95s + eye protection (or PAPRs) will likely be considered to have had a "low-risk exposure." HCWs with low-risk exposures are allowed to continue to work with symptom monitoring. In contradistinction, HCWs who used standard procedural PPE for the encounter will likely be quarantined for 14 days. These determinations are subject to Occupational Health Services oversight and this information is provided as a general guide to HCWs when choosing PPE for these specific scenarios.

#### **Definitions:**

- **High-Risk Surgeries and Procedures:**
  - Any procedures on the airway, throat, mouth or sinuses (bronchoscopy, tracheostomy, glossectomy, laryngoscopy procedure...etc)
  - Endoscopy, Transesophageal echocardiography, Electroconvulsive therapy
  - Surgery under regional anesthetic with high likelihood of requiring GA
  - Active CPR
  - Thoracic surgery/procedures
  - **See Appendix C for Society of Interventional Radiology list of procedures performed by radiologists that should be considered aerosol-generating**
- **Symptomatic or High-Risk Patient:**
  - Any of the following *new acute* symptoms:
    - Fever (objective or subjective)
    - Myalgias
    - Respiratory symptoms (dyspnea or cough)
    - URI symptoms (headache, rhinorrhea, sore throat)
    - GI symptoms (diarrhea, nausea, vomiting)
    - ENT symptoms (loss of taste or smell)
    - Eye symptoms (conjunctivitis)
    - Other clinical concern for COVID-19
  - Chest imaging findings suggestive of COVID-19 (bilateral, ground glass, peripheral distribution)
  - Sustained close contact (e.g. household contact) with a known case of COVID-19
  - Unable to provide history and no collateral regarding symptoms available

- Newborns born to mothers with known COVID-19
- **Asymptomatic patient:**
  - Meets none of the Symptomatic or High-Risk patient criteria
- **COVID-19 APEX Flags:**

COVID-19 Flag	Interpretation
<b>COVID-19 (Confirmed)</b> 	COVID-19 Infected Patient
<b>COVID-19 (Pending)</b> 	Patient Under Investigation (PUI)
<b>COVID-19 (Exposed)</b> 	Asymptomatic with test negative or not tested; Exposure to someone with PCR-confirmed COVID-19 w/i last 14 days

**Guidance:** Tables 1-4 summarize recommended personal protective equipment (PPE) use and imaging suite management for each scenario in adult and pediatric patients. Please continue to follow [UCSF Health guidelines for safe re-use of PPE](#). For any individual case, critical information to know when consulting these tables:

1. COVID-19 testing status and results
2. Category of image-guided intervention (High Risk = aerosol-generating procedure, see Appendix C)
3. Anesthetic plan
4. When general anesthesia is planned, whether the patient will be intubated and extubated in the imaging suite or elsewhere and then transported to/from the imaging suite

*Additional operational details:*

- At Parnassus, Fluoroscopy Rooms 5 and 6 (M345 and M347, respectively) have been outfitted as independent negative pressure suites. Whenever possible, these suites should be used for intubation and extubation of patients undergoing general anesthesia for diagnostic imaging or intervention in CT or body interventional radiology, provided a negative COVID-19 test is not available within the last 4 days for outpatients and within the last 7 days for inpatients.
- At Mission Bay, the MRI induction room (C1755) has very fast air exchange. Whenever possible, asymptomatic pediatric patients without a negative COVID-19 RT-PCR test within the appropriate timeframe should enter and emerge from anesthesia in this room and be transported to and from imaging suite on the 1<sup>st</sup> floor of Mission Bay Hospital (Table 4, Scenario 2b). This applies only to diagnostic imaging under anesthesia in pediatric patients. Pediatric patients undergoing interventional radiology and

neurointerventional radiology procedures should be anesthetized in the interventional suites on the 2<sup>nd</sup> floor of Mission Bay Hospital.

For all pediatric cases under anesthesia on the 1<sup>st</sup> and 2<sup>nd</sup> floors: Pediatric anesthesiologists may elect to use manage the airway with an endotracheal tube or a laryngeal mask airway (LMA). Alternatively spontaneous mask ventilation or simple nasal cannula may be used. General rules (see also Table 4):

- Intubation with placement and removal of an endotracheal (ET) tube will always be considered aerosol-generating.
  - LMA placement and removal will usually not be aerosol-generating, however these may be aerosol-generating under certain conditions that cannot be predicted prior to placement/removal. Therefore airborne PPE should be used by any providers present in the room where LMA placement and removal occurs. Pediatric anesthesia staff will make a determination in every case to guide room management and PPE use for providers not present during placement and removal.
  - Spontaneous mask ventilation or simple nasal cannula will not be considered aerosol-generating.
- Minimize opening doors whenever an aerosol-generating procedure is underway. When caring for asymptomatic patients in whom a recent COVID-19 test is NOT available, providers and patients may quickly exit the imaging suites during the imaging suite downtime. When doing so they should minimize the time that the door is open in order to prevent possible contamination of adjacent airspaces.
  - Room-specific downtimes are posted **inside** of every room where an aerosol-generating procedure might occur in the department. Imaging suites should be marked on **outside** doors with signs indicating that an aerosol-generating procedure is underway. The start time for room downtime is the time that the last aerosol-generating procedure occurs in the room. If this is not indicated by the proceduralist team and/or the anesthesia team, then this should begin upon patient departure. **See Appendix D for sign templates currently in use.** Instructions for use of signs and barriers in the department are available [here](#).

**Table 1:** Guidance for **ADULT** patients with COVID-19 PCR test results within last 4 days (outpatients) or 7 days (inpatients) and for **PEDIATRIC** patients with COVID-19 test results within last 4 days (1<sup>st</sup> test, inpatient or outpatient) or last 14 days (if previous negative test and no new symptoms or exposures)

Scenario	Radiology Personnel PPE	Room Management	Room Cleaning
1. <b>COVID-19 Positive/PUI/COVID-19 Exposed</b> for diagnostic imaging <u>under general anesthesia</u> or ANY image-guided intervention	<ul style="list-style-type: none"> <li>• Reusable N95 + face shield/goggles or PAPR</li> <li>• Gown</li> <li>• Double Gloves</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize number of providers present</li> <li>• <b>No radiology trainees present</b></li> <li>• Last case of day preferable</li> <li>• Room downtime 1 hour after patient departure</li> </ul>	<ul style="list-style-type: none"> <li>• Technologist cleans equipment 1 hour after patient departure</li> <li>• Terminal clean</li> </ul>
2. COVID-19 test negative, HIGH RISK image-guided procedure and/or general anesthesia	<ul style="list-style-type: none"> <li>• Standard procedural PPE <b>or</b></li> <li>• Reusable N95 + face shield/goggles (or PAPR) + standard procedural PPE</li> </ul>	<ul style="list-style-type: none"> <li>• No room downtime required</li> </ul>	<ul style="list-style-type: none"> <li>• Routine cleaning upon patient departure</li> </ul>
3. COVID-19 test negative, LOW RISK image-guided procedure under local anesthetic, conscious sedation, or monitored anesthesia care	<ul style="list-style-type: none"> <li>• Standard procedural PPE</li> </ul>	<ul style="list-style-type: none"> <li>• No room downtime required</li> </ul>	<ul style="list-style-type: none"> <li>• Routine cleaning upon patient departure</li> </ul>

**Table 2:** Guidance for **ADULT** patients without COVID-19 test results within last 4 days (outpatients) or 7 days (inpatients)

Scenario	Radiology Personnel PPE	Room Management	Room Cleaning
1. Asymptomatic patient for HIGH RISK image-guided procedure	<ul style="list-style-type: none"> <li>Reusable N95 + face shield/goggles or PAPR</li> <li>Gown</li> <li>Double Gloves</li> </ul>	<ul style="list-style-type: none"> <li>Non-anesthesia personnel should leave room for intubation and extubation</li> <li>Minimize number of providers present</li> <li>Room-specific downtime after last AGP, per signs in room and Appendix B</li> </ul>	<ul style="list-style-type: none"> <li>Routine cleaning after downtime complete</li> </ul>
2. A. Asymptomatic patient for diagnostic imaging under <u>general anesthesia</u> or LOW RISK image-guided procedure, <b>intubation/extubation take place in imaging suite</b>	<ul style="list-style-type: none"> <li>For rooms with 15 minute downtime, enter after 15 minutes with standard PPE</li> <li>For all other rooms, enter after intubation with: <ul style="list-style-type: none"> <li>Reusable N95 + face shield/goggles or PAPR</li> <li>Gown</li> <li>Double Gloves</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Non-anesthesia personnel should leave room for intubation and extubation</li> <li>Room-specific downtime after last AGP, per signs in room and Appendix B</li> </ul>	<ul style="list-style-type: none"> <li>Routine cleaning after downtime complete</li> </ul>
2. B. Asymptomatic patient for diagnostic imaging under <u>general anesthesia</u> or LOW RISK image-guided procedure, <b>intubation/extubation take place elsewhere and patient is transported to/from imaging suite</b>	<ul style="list-style-type: none"> <li>Standard procedural PPE</li> </ul>	<ul style="list-style-type: none"> <li>No room downtime required</li> </ul>	<ul style="list-style-type: none"> <li>Routine cleaning after patient departure</li> </ul>
3. Asymptomatic patient for LOW RISK image-guided procedure under local anesthetic, conscious sedation, or monitored anesthesia care	<ul style="list-style-type: none"> <li>Standard procedural PPE</li> <li>Conscious sedation/MAC: if airway rescue is necessary, support patient and transition to #2a PPE instruction</li> </ul>	<ul style="list-style-type: none"> <li>No room downtime required</li> </ul>	<ul style="list-style-type: none"> <li>Routine cleaning after patient departure</li> </ul>

**Table 3:** Guidance for PEDIATRIC PATIENTS without COVID-19 test results within last 4 days (1<sup>st</sup> test, inpatient or outpatient) or last 14 days (if previous negative test and no new symptoms or exposures)

Scenario	Radiology Personnel PPE	Room Management	Room Cleaning
1. Asymptomatic patient for HIGH RISK image-guided procedure	<ul style="list-style-type: none"> <li>• Reusable N95 + face shield/goggles or PAPR</li> <li>• Gown</li> <li>• Double Gloves</li> </ul>	<ul style="list-style-type: none"> <li>• Non-anesthesia personnel should leave room for intubation and extubation</li> <li>• Minimize number of providers present</li> <li>• Room-specific downtime after last AGP, per signs in room and Appendix B</li> </ul>	<ul style="list-style-type: none"> <li>• Routine cleaning after downtime complete</li> </ul>
2. A. Asymptomatic patient for diagnostic imaging under general anesthesia or LOW RISK image-guided procedure, <b>induction and emergence take place in imaging suite</b>	<ul style="list-style-type: none"> <li>• ET tube used, room downtime = 15 minutes: enter 15 minutes after intubation with standard PPE</li> <li>• ET tube used, room downtime <math>\geq</math> 30 minutes: <ul style="list-style-type: none"> <li>○ Reusable N95 + face shield/goggles or PAPR</li> <li>○ Gown</li> <li>○ Double Gloves</li> </ul> </li> <li>• Some forms of anesthesia will not be aerosol-generating. Follow anesthesia provider instructions for safe timing of entry in standard PPE</li> </ul>	<ul style="list-style-type: none"> <li>• Non-anesthesia personnel should leave room for intubation/extubation</li> <li>• Room-specific downtime after last AGP, per signs in room and Appendix B</li> <li>• If anesthesia provider does not place endotracheal tube and confirms absence of aerosol generation, no room downtime required</li> </ul>	<ul style="list-style-type: none"> <li>• Routine cleaning after downtime complete</li> </ul>
2. B. Asymptomatic patient for diagnostic imaging under general anesthesia or LOW RISK image-guided procedure <b>induction and emergence from anesthesia take place elsewhere and patient is transported to/from imaging suite</b>	<ul style="list-style-type: none"> <li>• Standard procedural PPE</li> </ul>	<ul style="list-style-type: none"> <li>• No room downtime required</li> </ul>	<ul style="list-style-type: none"> <li>• Routine cleaning after patient departure</li> </ul>

## Appendix A: Performance of the COVID-19 RT-PCR test

### COVID-19 Diagnostic Testing in Perioperative Setting:

**Reverse transcriptase PCR (RT-PCR) testing** for COVID-19 detects RNA from SARS-Coronavirus-2 and is the primary test used for diagnosis of acute infection. Analytical sensitivity of PCR testing is very high at >98%<sup>1</sup>.

**Clinical sensitivity of RT-PCR** varies by site of sampling, likely due to variation in quality of sampling technique, time of sampling with respect to disease course (viral titers are highest early in infection<sup>2</sup>), and variation in the distribution of virus in the lower versus upper respiratory tract. Our understanding of clinical sensitivity of RT-PCR is based on a) prior studies using RT-PCR to detect respiratory viruses, and b) limited data on SARS-CoV-2<sup>2,3</sup>. Prior studies of respiratory viruses have found that sampling by nasopharyngeal (NP) swab may be more sensitive than oropharyngeal (OP) swab sampling, and that a combination of NP + OP may increase sensitivity, although variation by virus was observed<sup>3-5</sup>. Two limited studies of SARS-CoV-2 have compared percent test positivity based on sampling site but were not done in a way that allowed accurate calculation of sensitivity. The larger study (213 patients, not-yet peer reviewed) found that test positivity in the first 14 days of symptom onset was higher in NP swabs (72%) versus OP swabs (61%)<sup>2</sup>. The smaller study (9 patients) found 100% test positivity during the first five days of symptoms and 46% test positivity after the first five days, independent of swab type<sup>6</sup>. Additional studies suggest that sputum and lower respiratory specimens (endotracheal aspirate) may have higher viral loads and thus possibly higher sensitivity when tested compared to the nasopharynx or oropharynx, especially earlier during disease course<sup>2,7,8</sup>.

**What does a negative RT-PCR test mean?** The negative predictive value [(true negatives)/(true negatives + false negatives)] allows us to understand the significance of a negative test, which depends on the prevalence of disease in the population being tested. In asymptomatic patients, the prevalence of SARS-CoV-2 in the Bay Area and in the U.S. is not yet known, but based on data in other countries<sup>9</sup>, is estimated to be approximately 1%. Given that the estimated prevalence of asymptomatic patients in the Bay Area is very low, the negative predictive value for a test in an asymptomatic patient prior to surgery is very high. For example, if the COVID-19 prevalence is assumed to be 1% and the sensitivity/specificity of a NP swab test is estimated at 75%/98%, then the negative predictive value of the test is 99.7%.

### References:

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2. Yang, Y. *et al.* Evaluating the accuracy of different respiratory specimens in the laboratory diagnosis and monitoring the viral shedding of 2019-nCoV infections. <http://medrxiv.org/lookup/doi/10.1101/2020.02.11.20021493> (2020) doi:10.1101/2020.02.11.20021493.
3. Wang, W. *et al.* Detection of SARS-CoV-2 in Different Types of Clinical Specimens. *JAMA* (2020) doi:10.1001/jama.2020.3786.
4. Lieberman, D. *et al.* Identification of Respiratory Viruses in Adults: Nasopharyngeal versus Oropharyngeal Sampling. *Journal of Clinical Microbiology* **47**, 3439–3443 (2009).
5. Spencer, S., Thompson, M. G., Flannery, B. & Fry, A. Comparison of Respiratory Specimen Collection Methods for Detection of Influenza Virus Infection by Reverse Transcription-PCR: a Literature Review. *Journal of Clinical Microbiology* **57**, (2019).
6. Wölfel, R. *et al.* Virological assessment of hospitalized patients with COVID-2019. *Nature* (2020) doi:10.1038/s41586-020-2196-x.
7. To, K. K.-W. *et al.* Temporal profiles of viral load in posterior oropharyngeal saliva samples and serum antibody responses during infection by SARS-CoV-2: an observational cohort study. *The Lancet Infectious Diseases* (2020) doi:10.1016/S1473-3099(20)30196-1.
8. Yu, F. *et al.* Quantitative Detection and Viral Load Analysis of SARS-CoV-2 in Infected Patients. *Clin. Infect. Dis.* (2020) doi:10.1093/cid/ciaa345.
9. Gudbjartsson, D. F. *et al.* Spread of SARS-CoV-2 in the Icelandic Population. *New England Journal of Medicine* (2020) doi:10.1056/NEJMoa2006100.



## Appendix B: Imaging Suite Downtimes

Imaging suite downtimes are derived from airflow characteristics in each imaging suite to achieve a 99% air turnover. **If anyone is present in the suite during or after an aerosol-generating procedure in this time period, airborne PPE should be utilized.**

The most efficient way to achieve the desired air exchange is to keep the doors closed. When caring for asymptomatic patients, providers and patients may exit the imaging suite. However care should be taken to minimize the time that the door(s) to the suite are open to minimize potential contamination of adjacent airspace and maximize air turnover.

Parnassus			Mission Bay		
Room Number	Radiology Name	Room Downtime	Room Number	Radiology Name	Room Downtime
M365	IR Room 8	30 minutes	C2675	IR Hybrid/OR23	15 minutes
M375	IR Room 9	45 minutes	A2683	IR/OR24	30 minutes
M337	IR Room 4	15 minutes	C1769	MBCT1	30 minutes
L367	NIR Z	30 minutes	C1716	MBCT2	30 minutes
L382	NIR S	15 minutes	C1714	MBCT3	30 minutes
L389	NIR Q	30 minutes	C1755	MRI Induction Room	15 minutes
L361	CT 2	15 minutes	C1729	Nuclear Medicine	45 minutes
L363	CT 4	30 minutes	C1721	PET/CT	45 minutes
L300	MRLP	45 minutes	C1778	Fluoro 1	45 minutes
L314	MR4	30 minutes	C1782	Fluoro 2	45 minutes
M345	Room 5	30 minutes	C1758A	RN Holding 1	45 minutes
M347	Room 6	30 minutes	C1758B	RN Holding 2	45 minutes
M337	ERCP	15 minutes	C1758Q	US1	45 minutes
L376	US Room 2	15 minutes	C1758V	US4	60 minutes
Mt. Zion			PCMB		
Room Number	Radiology Name	Room Downtime	Room Number	Radiology Name	Room Downtime
A237	MZ IR 1	30 minutes	L2141-A	PCMB1	30 minutes
A239	MZ IR 3	30 minutes	L2141-B	PCMB2	30 minutes
A241	MZ Holding Room	45 minutes	L2171	PCCT1	15 minutes
A134	MZ CT	30 minutes	L2131	Holding Room 3	45 minutes
			L2131	Holding Room 4	45 minutes
			L3180E	Breast Biopsy	45 minutes
			L2128	US Room 2	45 minutes

### **Appendix C: Aerosol-Generating Procedures Performed by Radiologists (HIGH RISK image-guided procedures)**

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

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

## APPENDIX D: Signs in Radiology

<b>ROOM DOWNTIME REQUIREMENTS</b>
Location: <b>M365 (IR 8)</b>
<p style="text-align: center;"><u><b>Aerosol-Generating Procedure (AGP) in Asymptomatic Patient</b></u></p> <p style="text-align: center; color: red; font-weight: bold;">30 Minutes after last AGP</p> <p style="font-size: small;">* Patient and providers may leave after procedure. Minimize door opening and closing until downtime complete.</p>
<p style="text-align: center;"><u><b>Any Procedure in COVID-19+ Patient or Patient Under Investigation (PUI)</b></u></p> <p style="text-align: center; color: red; font-weight: bold;">60 Minutes after patient departure</p>

Example of room-specific sign permanently posted inside imaging suite

<div style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); height: 10px; margin-bottom: 10px;"></div> <h2 style="margin: 0;">Aerosol-Generating Procedure in Progress</h2>	
<div style="background-color: red; color: white; text-align: center; padding: 5px; display: flex; justify-content: space-between; align-items: center;"> <span style="font-size: 1.2em; font-weight: bold;">DO NOT ENTER</span> </div> <div style="display: flex; justify-content: space-between; align-items: flex-start; padding-top: 10px;"> <div style="width: 45%;"> <p style="margin: 0;"><b>AUTHORIZED TRAINED PERSONNEL ONLY</b></p> <div style="text-align: center; margin: 10px 0;"> <p style="font-size: x-small; margin: 0;">OR</p> </div> </div> <div style="width: 50%;"> <ul style="list-style-type: none"> <li>PAPR or N95 + Eye Protection Required While Inside</li> <li>Keep Door Closed</li> </ul> </div> </div>	
<b>ROOM DOWNTIME</b>	
<div style="border: 1px solid red; padding: 5px;">Date:</div>	<div style="border: 1px solid red; padding: 5px;"> Start : _____   Room Open: _____ </div>

Example of sign to be posted OUTSIDE room during HIGH-RISK (aerosol-generating) procedure and to stay posted until room downtime is complete

## **APPENDIX E: Isolation Status Links**

**CONTACT ISOLATION:** [https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Contact\\_Isolation.pdf](https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Contact_Isolation.pdf)

**DROPLET ISOLATION:** [https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Droplet\\_Isolation.pdf](https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Droplet_Isolation.pdf)

**AIRBORNE ISOLATION:** [https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Airborne\\_Isolation.pdf](https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Airborne_Isolation.pdf)

**ENTERIC CONTACT ISOLATION:** [https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Enteric\\_Contact\\_Isolation.pdf](https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/tkssra4681/f/Enteric_Contact_Isolation.pdf)