SARS-CoV2 (COVID-19) Testing: Recommendations for Surgeries and Procedures

Date: June 17, 2020

Note: the following guideline incorporates CDC recommendations and data available at this time. It is subject to change based upon the information received and assessment of resource availability.

I. Preface

Access to COVID-19 testing initially was limited to symptomatic patients and workforce. Given improved access to testing supplies and reagents, the system now has the opportunity to expand its criteria for testing.

Aerosol-generating procedures (AGP) are a mode of viral spread with the potential to infect staff at a distance beyond 6 feet despite the usage of regular surgical masks. In order to protect our surgical and procedural teams as well as to limit admission of COVID-19 positive patients after elective procedures, guidance regarding expansion of testing to preprocedural patients is now required.

PCR Testing

UMass Memorial now offers standard and rapid RNA assays in house. Results may be obtained within 6-12 hours for standard assays and approximately 1 hour for a limited number of rapid studies. To date, standard assays remain the gold standard given significant differences in testing capacity and sensitivity. The institution can now process several types of specimens including nasopharyngeal swabs and saliva collections. Either specimen type is appropriate for preoperative and preprocedural testing purposes.

The relationship between nasopharyngeal RNA load and clinical infectivity appears to be complex. Limited studies suggest high rates of live viral isolation during the first week of symptoms but limited isolation from sputum samples later in a clinical course, despite ongoing measurable viral RNA. Elective surgical candidates posing the greatest risk include those individuals with detectable viral loads on PCR despite being asymptomatic.

Procedure Risk Stratification

The CDC has released general guidance regarding AGP that require COVID PPE. Certain surgeries and procedures have been identified as posing an elevated risk to surgeons and proceduralists (Table 1). Such procedures necessitate additional protective measures defined as COVID PPE *Plus* in this document. The COVID algorithm at the end of this guideline reviews the specifics of when such protection is required and when standard of practice (SOP) may be used instead (Figure 2). For this document, SOP is defined by the use of a routine surgical procedure mask with appropriate eyewear protection as well as other appropriate procedural attire for all patients. Please note that SOP corresponds to “Mask Level C” as described in previous PPE mask clinical practice guidelines.

Table 1. Surgical and Procedural Risk Stratification with Recommended PPE for COVID-19 Patients

Tier 1:	**COVID PPE *Plus***
• All oropharyngeal and nasopharyngeal surgery • All sinus surgery • Any dental procedure with a drill • All thoracic surgery involving air leak or tracheal/pulmonary resection • Subglottic airway procedures (including tracheostomy)	• "Fully fit" N95 (Mask Level A) **AND** PAPR • Gloves • Gown
Tier 2:	**COVID PPE**
• Bronchoscopy (rigid or flexible) • Intubation • GI Endoscopy • TEE (+/- cardioversion) • ECT • PEG placement • Scheduled cesarean section or other planned regional anesthetics with high likelihood of conversion to GA during the procedure	• "Fully fit" (Mask Level A) N95 **OR** PAPR if failed all N95 • Face Shield • Gloves • Gown
Tier 3:	**COVID PPE**
• All other procedures	• If involving intubation: "Fully fit" (Mask Level A) N95 **OR** PAPR if failed all N95 • If not involving intubation: "Best fit" N95 (Mask Level B) is acceptable • Face shield • Gloves • Gown

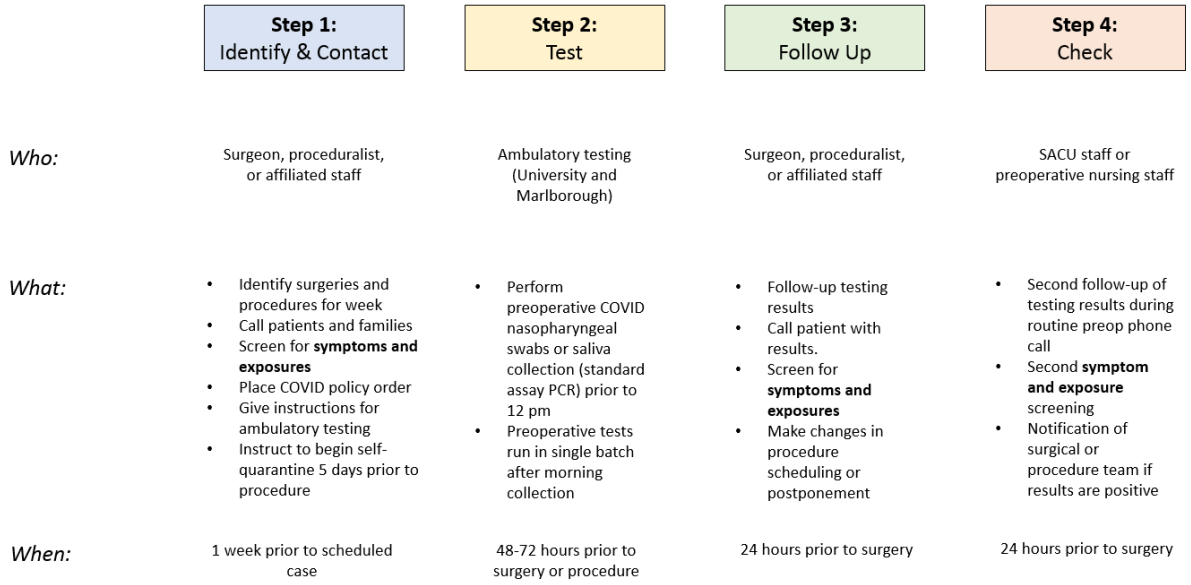
Ambulatory Preprocedural COVID-19 Testing

All ambulatory, preoperative patients should be screened for symptoms of COVID-19 as well as known exposures. In addition, patients must be referred for a nasopharyngeal swab or saliva testing 48-72 hours prior to their planned procedure at one of the ambulatory testing sites and isolate at home until day of surgery.

Ambulatory workflow including both identification of patients for testing and follow-up of test results primarily will be managed by the office of the surgeon or proceduralist. Please refer to the separate protocol, *Departmental SARS-CoV2 (COVID-19) Testing: Recommendations for Surgical and Procedural Workflow*, for further

details. Additional symptom and result review will be completed at time of preoperative or preprocedural nursing call within 24 hours of the scheduled case (Figure 1).

Figure 1. Ambulatory Workflow Preprocedural COVID-19 Testing



Inpatient Preoperative COVID-19 Testing

All patients, currently admitted or under evaluation in the emergency department, are required to undergo symptom and exposure screening within 24 hours of their planned procedure. Nasal swabs or saliva testing must be completed within 48-72 hours of urgent or elective cases by the inpatient teams. Inpatients that have had previous COVID-19 testing do not need repeat testing if all criteria are met: (1) the last test was within 72 hours, (2) they have no new symptoms or known COVID-19 exposures, and (3) they have stayed an inpatient and/or self-isolated at home continuously since the time of testing. While emergent procedures should not be delayed for specimen collection, a specimen should be obtained preoperatively on inpatient units or in the ED if possible. It is recognized these cases may be time sensitive, requiring a modification of workflow.

II. COVID-19 Procedural Algorithm

After symptom/exposure screening and return of COVID test results, an informed decision can be made regarding the need for COVID PPE protections and location for postoperative care. Previously identified "Tier 1" surgeries and procedures necessitate COVID PPE *Plus* precautions for anesthesia, nursing, and surgical teams *regardless of preoperative COVID testing results* (Table 1). Determinations for all other surgeries and procedures can be made with the assistance of the following algorithm (Figure 1). "Exposure" is defined as contact with a known COVID

positive individual (within 6 feet for at least 10-15 minutes) within the past 14 days prior to a scheduled surgery or procedure.

Special Consideration: Prior COVID Positive Patients

Those patients who have a historical positive COVID test warrant special consideration in selecting appropriate PPE and determining the location of postoperative admission (Figures 3 & 4). Please note the significant distinction in management of patients less than or greater than 6 weeks since date of PCR positivity. All untested patients or those with historical negative tests should follow the algorithm in Figure 2.

Prior Untested or COVID Negative Patient:

Figure 2. Untested or Prior COVID Negative Patient: Symptom and Exposure Stratification

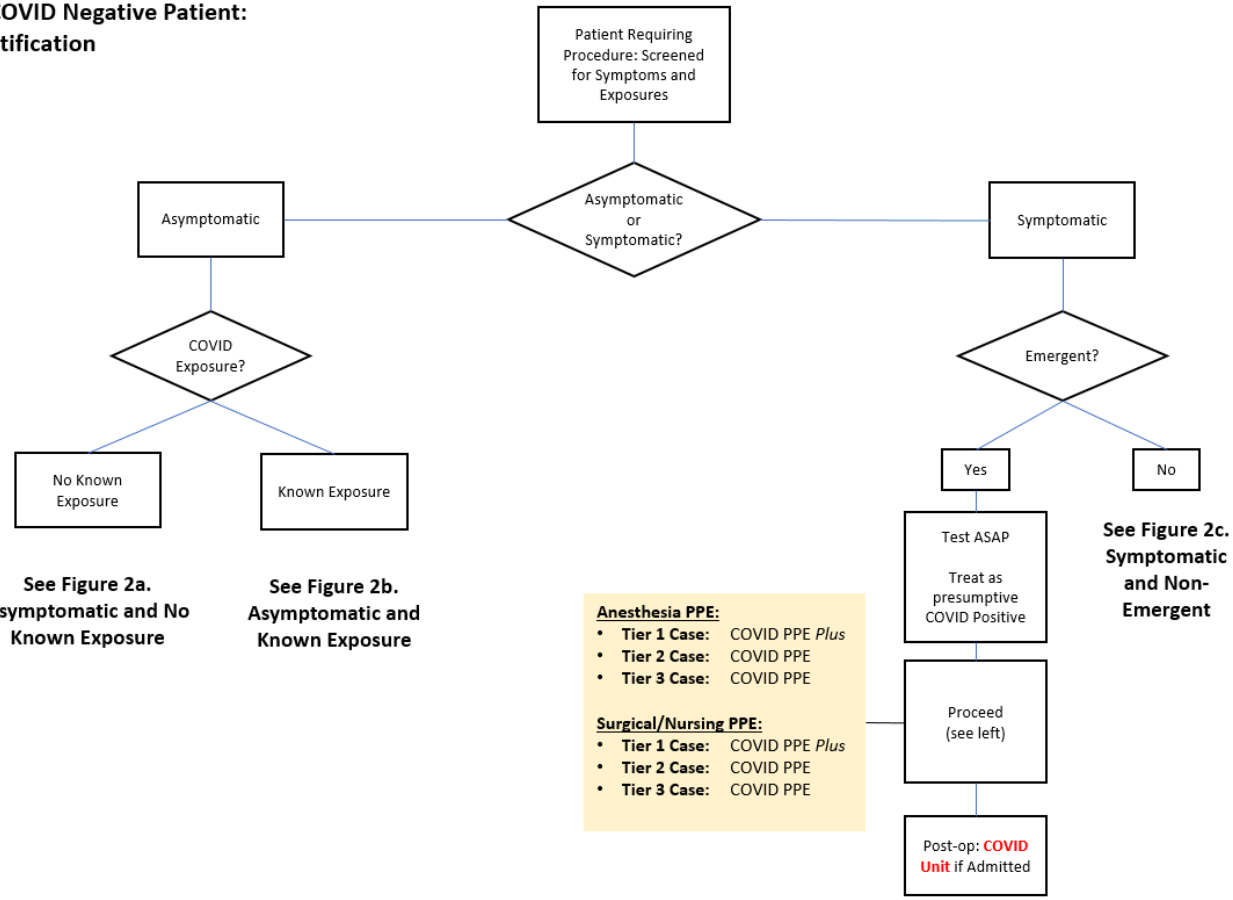


Figure 2a. Untested or Prior COVID Negative Patient : Asymptomatic & No Known Exposure

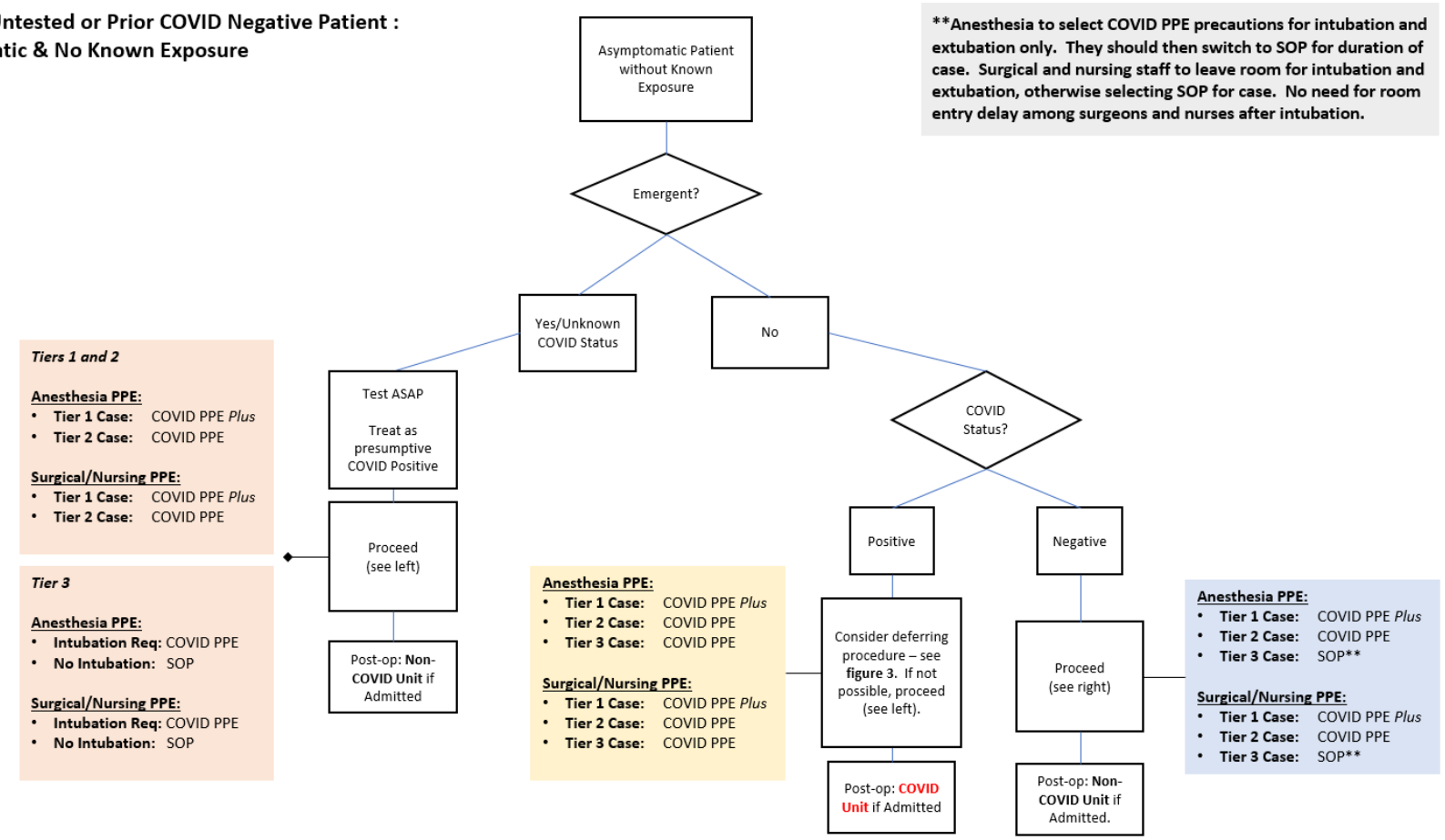


Figure 2b. Untested or Prior COVID Negative Patient : Asymptomatic & Known Exposure

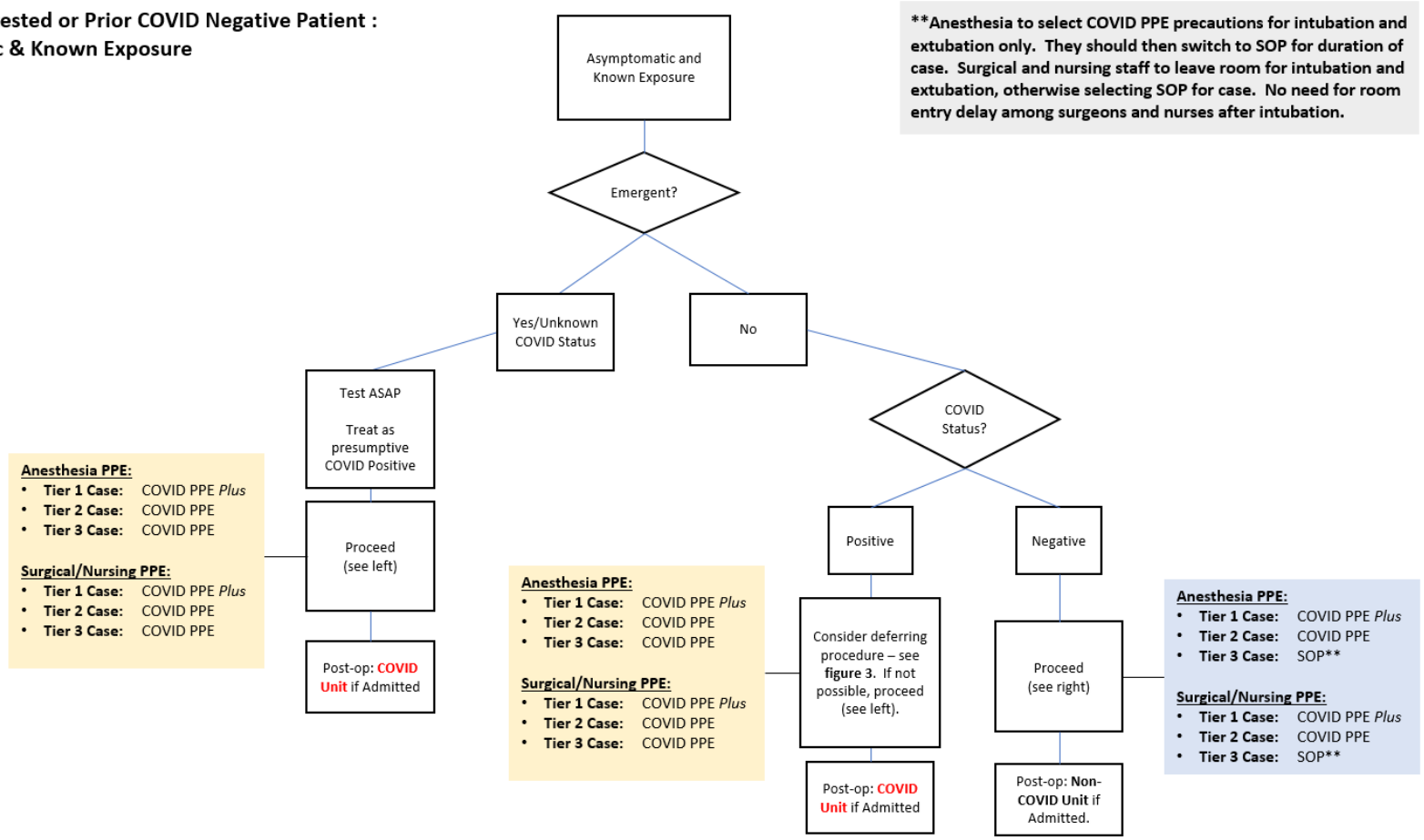
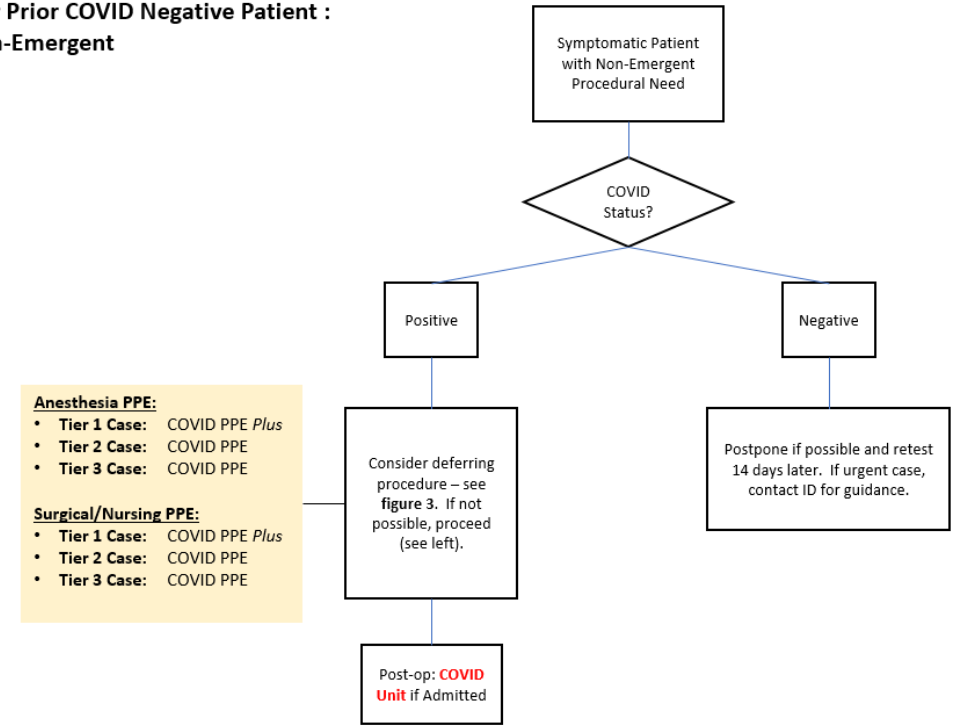
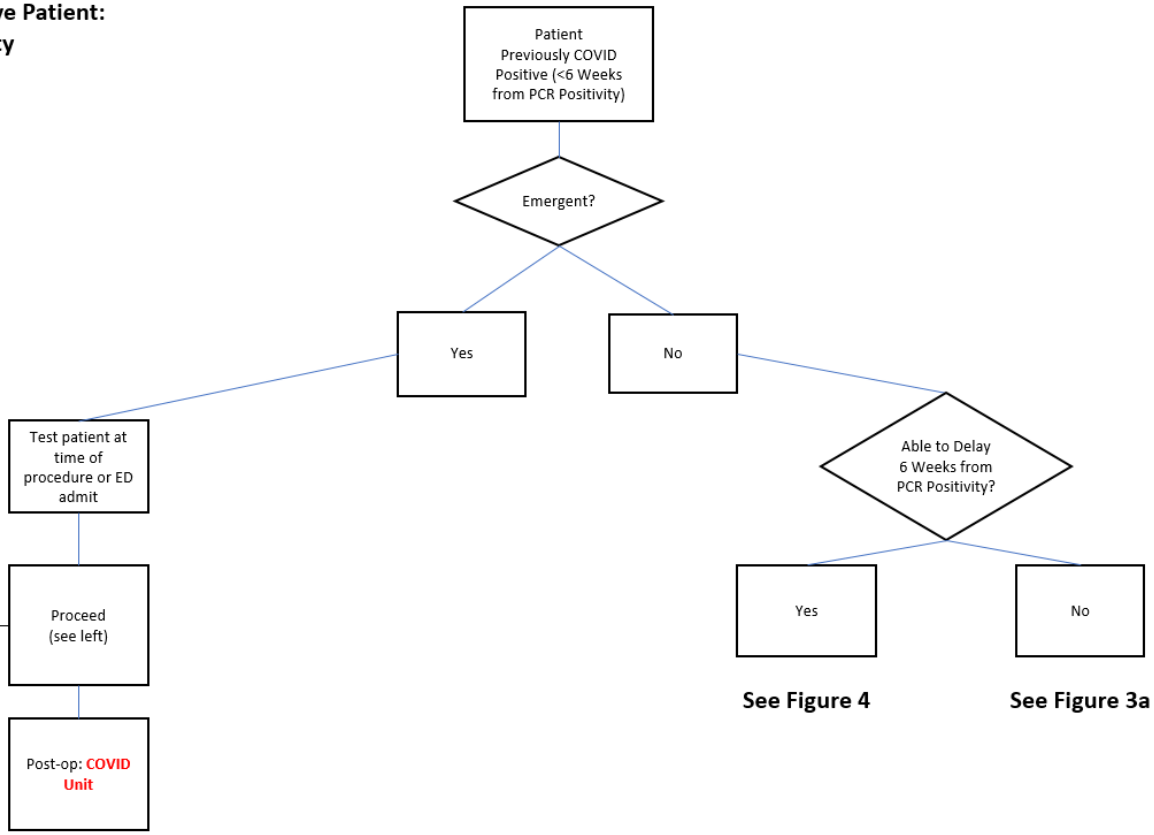


Figure 2c. Untested or Prior COVID Negative Patient : Symptomatic and Non-Emergent



Prior COVID Positive Patient:

Figure 3. Prior COVID Positive Patient: <6 Weeks from PCR Positivity



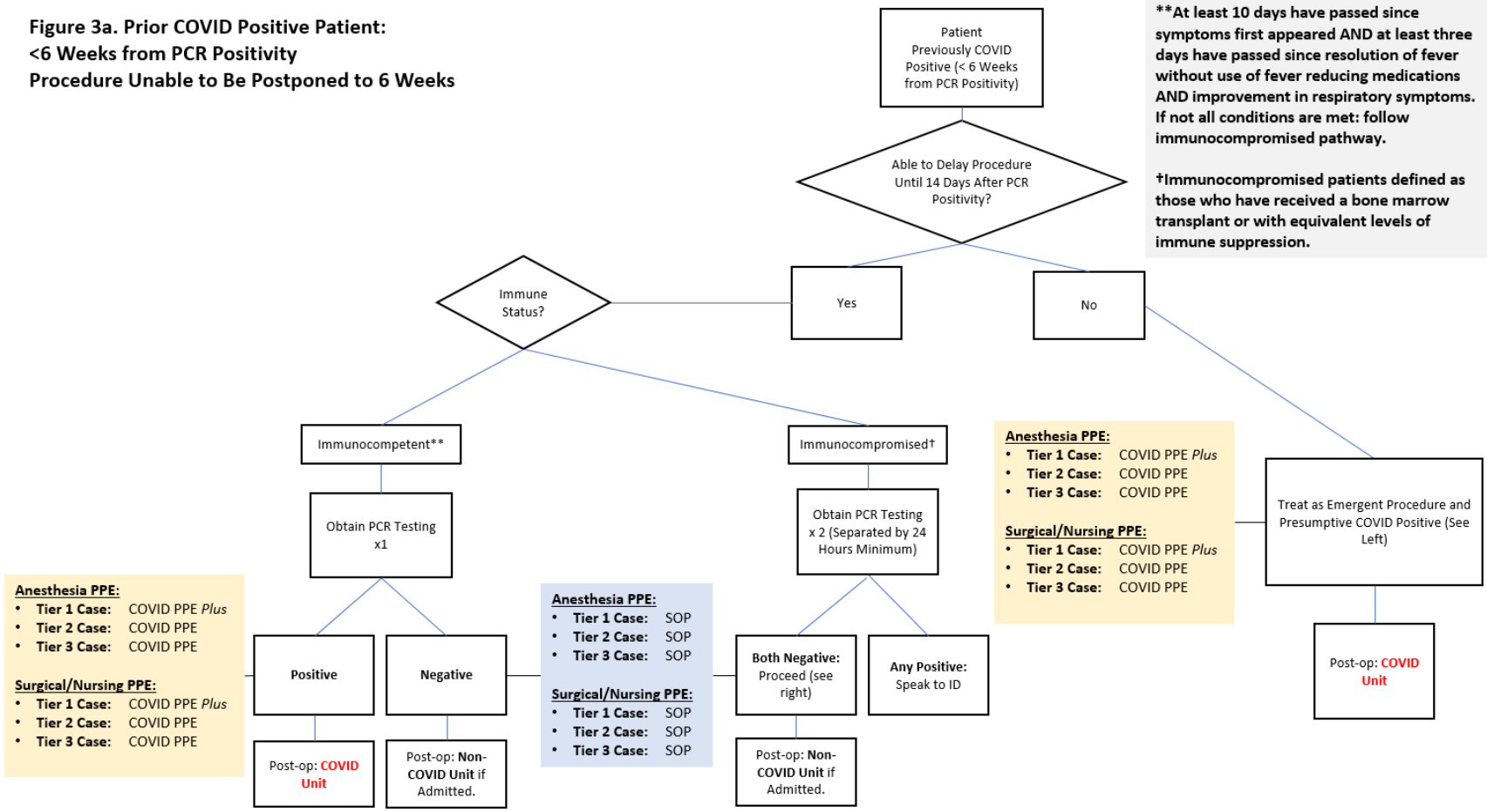
Anesthesia PPE:

- **Tier 1 Case:** COVID PPE *Plus*
- **Tier 2 Case:** COVID PPE
- **Tier 3 Case:** COVID PPE

Surgical/Nursing PPE:

- **Tier 1 Case:** COVID PPE *Plus*
- **Tier 2 Case:** COVID PPE
- **Tier 3 Case:** COVID PPE

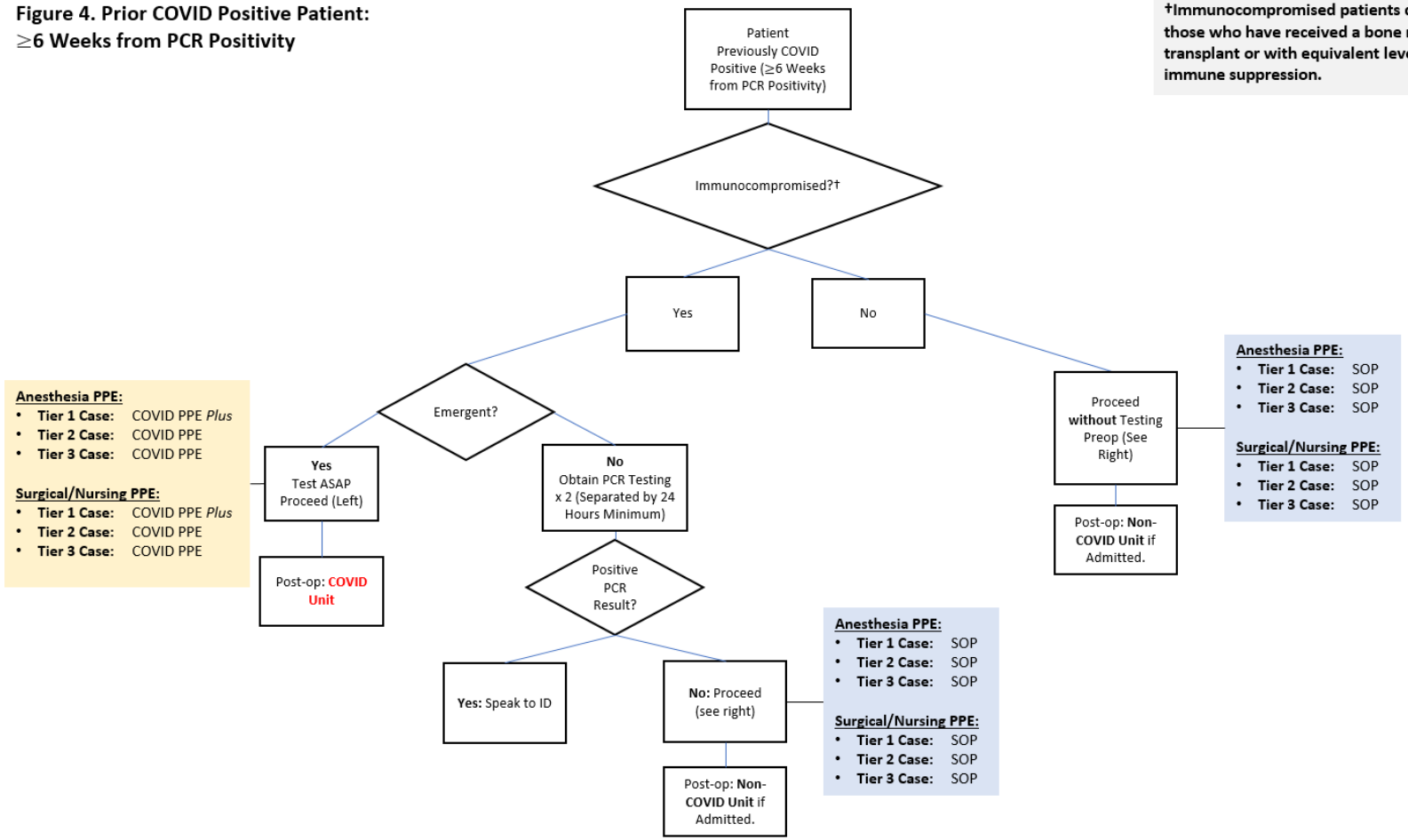
Figure 3a. Prior COVID Positive Patient:
<6 Weeks from PCR Positivity
Procedure Unable to Be Postponed to 6 Weeks



**At least 10 days have passed since symptoms first appeared AND at least three days have passed since resolution of fever without use of fever reducing medications AND improvement in respiratory symptoms. If not all conditions are met: follow immunocompromised pathway.

†Immunocompromised patients defined as those who have received a bone marrow transplant or with equivalent levels of immune suppression.

Figure 4. Prior COVID Positive Patient: ≥6 Weeks from PCR Positivity



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