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

Changes to this version:

- Testing must now be completed within 72 hours of procedure without exception.
- Inpatients with a prior negative test result must be retested within 5 days of procedure.
- Further guidance on managing rapid test results in urgent/emergent patients added.
- Helpful management matrix added to each clinical scenario outlined in Figure 2.

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. Please also note that this guidance is subject to change based on the community prevalence of COVID-19.

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 and Massachusetts DPH have released general guidance regarding AGP that require COVID PPE. Such surgeries and procedures have been identified as posing an elevated risk to surgeons and proceduralists (Table 1). These procedures necessitate use of COVID PPE to protect caregivers. Preprocedural testing can still be helpful in these situations in determining the appropriate procedure room or post-procedure disposition and should be done as much as possible. The COVID algorithm at the end of this guideline reviews the specifics of when such protection is required and when a standard surgical mask with appropriate eyewear may be used instead (Figure 2). Please note that the standard surgical mask 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

High Risk Procedures*:	**PPE:**
• Endotracheal Intubation and Extubation • Tracheotomy (e.g. tracheostomy replacement) • Bronchoscopy • Dental Procedures • Airway Procedures and Surgeries (e.g., ear nose and throat (ENT), thoracic, or transsphenoidal surgeries) • Scheduled cesarean section or other planned regional anesthetics with high likelihood of conversion to GA during the procedure • GI Endoscopy: EGD • TEE (+/- cardioversion)	COVID PPE: • "Fully fit" N95 (Mask Level A) **OR** PAPR • Gloves • Gown • Eye protection Non-COVID PPE: • "Fully fit" N95 (Mask Level A) **OR** PAPR • Gloves • Gown • Eye protection
Low Risk Procedures	**PPE:**
All other procedures including: • ECT • PEG Placement • Vaginal Delivery • GI Endoscopy: Colonoscopy	COVID PPE: • "Fully fit" N95 (Mask Level A) **OR** PAPR • Gloves • Gown

	• Eye protection Non-COVID PPE: • Surgical mask • Gloves • Gown • Eye protection

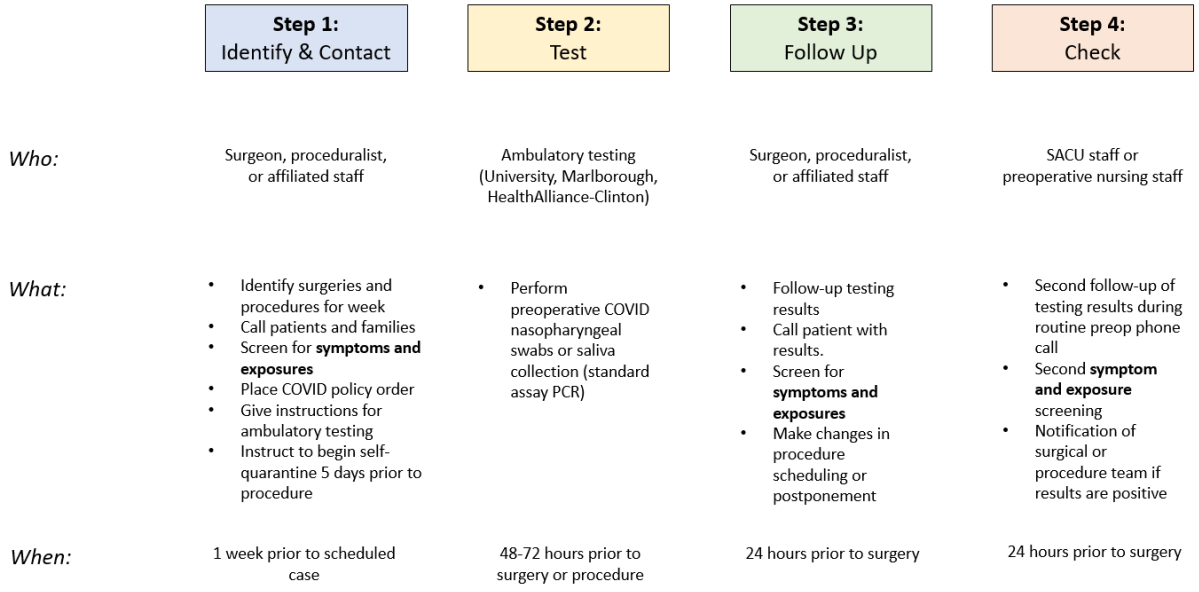
*ref: "Defining Aerosol Generating Procedures and Recommended PPE", memorandum from Mass DPH, 7/6/20.

Ambulatory Pre-procedural 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 up to 72 hours prior to their planned procedure at one of the ambulatory testing sites and isolate at home until day of surgery. If a patient presents for an elective case without a test result or a result >72 hours the case will be cancelled. All exceptions to this guidance must be approved by the Medical Director for Peri-Operative Services (UMMMC) or Chief Medical Officer (HA-C, Marlborough).

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 Pre-procedure COVID-19 Testing

All inpatients should undergo admission surveillance testing per current admission protocols. 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. Based on current COVID-19 prevalence, inpatients that have had previous negative COVID-19 testing on admission do not need repeat testing if (1) the last test was within 5 days, (2) they have no new symptoms, and (3) they have stayed an inpatient continuously since the time of testing. Emergent procedures should not be delayed for specimen collection.

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. The attached algorithm (Figure 2) assists in this process. "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. An "emergent" procedure or surgery is defined as a level A, B, or C case according to anesthesia guidelines. The emergent nature of level D cases should be left up to the discretion of the proceduralist in consultation with anesthesia.

Procedural room considerations

Modified: Dr. Joe McQuaid, 11/10/2020

As noted above, pre-procedure testing should be obtained whenever possible prior to a procedure when it is clinically safe to do so. This includes emergent procedures. Additionally, obtaining pre-procedure testing can help inform the patient's post-procedural disposition.

In emergent cases where pre-procedure testing has not resulted, the patient should be screened for symptoms and exposure of COVID-19. If the patient is *asymptomatic*, *does not* have symptoms consistent with COVID-19, and *does not* have known exposures, the procedure *does not* need to be performed in a COVID-19 specified room. The patient *does not* need to be treated as a Patient Under Investigation (PUI), and the operating or procedure room *does not* require terminal cleaning.

If the *patient does* have symptoms or *does* have a known exposure, then they *do* need to be treated as PUI. The procedure *does* need to be performed in a COVID-19 specified room as outlined in Fig 2b and 2c. These rooms *do* require terminal cleaning after the surgery or procedure.

Notably, the location of postprocedural and postsurgical recovery (i.e. PACU/SACU and inpatient unit) should be consistent with this aforementioned PUI status. For the purposes of Figure 2, this has been designated as COVID or Non-COVID unit for PUI and non-PUI cases respectively.

Anesthesia workflow

As referenced in Table 1 above, endotracheal intubation is considered a high risk procedure. Therefore, anesthesia providers performing endotracheal intubation should use COVID PPE as recommended above. In cases where there is no intubation required, anesthesia providers can use a standard surgical mask. Other members of the procedure team may elect to step out of the room during the intubation and extubation procedures.

Rapid Test Results

Based upon experience during the initial wave of the COVID-19 pandemic, there is an improved understanding of the performance characteristics of the rapid test.

All patients with a positive rapid test result should be considered COVID positive. If they require a surgery or procedure, they must be treated in a COVID procedure room or operating room, and they must recover in a COVID unit.

Please refer to the resource *UMMHC Protocol for COVID-19 RAPID Testing Use in the ED Setting* for further detailed information regarding admission information and treatment as a surveillance patient or PUI. If these

patients do require an emergent or urgent procedure prior to return of the PCR-based testing, they should be treated as 'untested' in Figure 2.

III. Special Considerations

Special Consideration: Prior COVID Positive Patients

Those patients who have a historical positive COVID test ("Recovered COVID Positive Patient") warrant special consideration in selecting appropriate PPE and determining the location of postoperative admission (Figure 3). Our understanding of the management of individuals who have recovered from COVID is continuing to evolve, and these guidelines are likely to change in the future. Please note the significant distinction in management of patients less than or greater than 3 months since date of PCR positivity that are based on the possibility that individuals who have recovered from COVID may be able to be reinfected in subsequent years.

All patients less than 3 months since COVID positivity are considered "recovered" if 10 days have passed since initial symptoms, one day has passed since resolution of fever without use of antipyretics, and there has been an improvement in respiratory symptoms. NO further testing is required for this population prior to a planned surgery or procedure.

For patients less than 3 months since COVID positivity who *either* do not meet the above criteria for recovery *or* have new symptoms consistent with COVID, the immunocompromised pathway in Figure 3 should be followed including two separate PCR tests separated by 24 hours.

All untested patients, those with historical negative tests, or those who are greater than 3 months since COVID positivity should follow the algorithm in Figure 2.

Special Consideration: Residential Facility Patients

Patients currently residing in a facility do not warrant special status and should not by default be considered a PUI. Given the current, low community prevalence they should be screened for symptoms and known exposures. These patients should follow the same guidelines for preprocedural testing.

Special Consideration: Transfer Patients

Transfer patients warrant special discussion, and the facility from which these patients are transferred must be considered in the decision to test prior to a planned procedure.

For patients received from a UMass Memorial Health Care (UMMHC) member hospital (HealthAlliance-Clinton or Marlborough, Medical Center), there is no need for repeat testing if the patient has remained in house since admission and has no new symptoms or exposures and has had a negative surveillance test on admission as outlined previously.

For non-UMMHC entities, testing must be repeated upon admission. While the test results are pending, the patient should be kept on surveillance precautions if there is evidence of a negative test result from the transferring hospital. In situations where a previous testing result is not available, transfer from non-UMMHC entities should not be delayed. Instead, the patient should be considered exposed and treated as a PUI.

If a transfer patient from a non-UMMHC entity requires an emergent procedure before repeat testing can be completed, the patient should be treated as a PUI with known exposure. The algorithm in Figure 2b should be followed.