ChristianaCare™

COVID-19 Procedural Guidelines

Purpose: To clarify appropriate protocols for COVID-19 testing, use of personal protective equipment (PPE) and other infection prevention measures to prevent transmission of COVID-19 related to surgery and other procedures.

Definitions:

Procedure area: Area that is used only for surgery or other procedures (e.g., OR, HVIS).

Non-procedure area: Area that is used primarily to evaluate or house patients, but in which procedures may be done (e.g., ICUs, EDs, transitional care units, medical-surgical units).

Aerosol-generating procedure (AGP): a procedure that is considered more likely to generate aerosols (droplet nuclei) in addition to larger droplets. See Respiratory Guidance for more information on AGPs.

Guidance for Procedure Areas

A. Scheduling Cases

1. Emergent, urgent and other medically necessary procedures will be prioritized. Elective cases may be scheduled.
2. Pre-procedure screening (see Appendix) should be conducted by telephone prior to patient arrival, if possible, and upon arrival.
3. The American College of Surgeons has elective case triage guidelines by specialty: https://www.facs.org/covid-19/clinical-guidance/elective-case

B. Screening for COVID-19

1. All patients will be verbally screened for COVID-19 symptoms and/or exposures prior to surgery, per current process.
    a) Symptomatic patients:
        i. Non-emergent procedures will be rescheduled.
        ii. Urgent procedures (can be delayed 24-48 hours) will be tested as outlined below.
        iii. Emergent cases will be handled per current process with appropriate PPE, without testing.
    b) Asymptomatic patients with possible COVID-19 exposure within the past 14 days:
        i. Defer for 14 days from the date of last exposure, if possible.

C. Testing for COVID-19

1. Testing for COVID-19 using a nasal/ nasopharyngeal PCR test is recommended for patients without COVID-19 symptoms or known exposures undergoing the procedures below (antibody/antigen testing not accepted):
    a) Nasopharyngeal/oropharyngeal/ENT procedures
    b) Oral surgery/dental procedures
    c) Scheduled Cesarean Sections

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d) The following procedures only when performed on a non-intubated patient going under general anesthesia, or with moderate sedation AND is a high risk for critical intervention mid-procedure (i.e. Intubation)
    i. Bronchoscopy and bronchoscopic interventions
    ii. Upper GI endoscopies
    iii. Transesophageal echocardiography
    iv. Procedures with an anticipated lung resection

These recommendations are not intended to replace clinical judgement. Clinicians should consider testing for any individual who in the opinion of the surgeon has an increased risk of COVID-19 exposure.

2. Tests should be obtained 3-5 days in advance of the scheduled procedure (not counting the day of procedure) to allow sufficient time for results to be available. If known turn-around-times at an outside lab does not ensure that results will be available by the day prior to the procedure, the ChristianaCare lab should be used.
    a) Patients are expected to self-quarantine between their test and procedure.
    b) Scheduled cases with positive test results will be cancelled or delayed unless the case has escalated to a Class 1-4.
    c) Cases where the test is still pending or was unable to be performed may proceed after a consideration of the risks/benefits of delaying surgery in this situation.
        i. An asymptomatic patient has a low likelihood of having COVID-19 (<1%) and is not considered a PUI (person under investigation) just because testing was not performed. PPE should be used as described below.
        ii. Under no circumstances should additional in-house testing be ordered to achieve a faster turn-around time to enable to procedure to proceed.

3. If PowerChart is used for ordering, the "Surveillance COVID Testing" care set should be used: http://intranet/sites/InfectionPrevention/EmergingPathogens/Pages/2019NovelCoronavirusGuidance.aspx. Do not use an alternative care set to order testing with a faster turn-around time, because the procedure cannot be delayed (see 2.c.ii. above).

4. Please note that only patients undergoing procedures at a ChristianaCare facility should be sent to a ChristianaCare lab for testing.
    a) Patients who plan to use a ChristianaCare testing site should follow these instructions: https://christianacare.org/covid19proceduretesting/

5. All patients should be advised to self-isolate between the time their test is obtained and their procedure. Any other required pre-procedure testing should be done before obtaining the COVID-19 surveillance test.

6. For emergent procedures that cannot be delayed until test results are available, the procedure should proceed without testing and with appropriate PPE as outlined below.

7. For urgent procedures that can be delayed for 24 hours, testing should be done to guide PPE.
    a) A negative pre-procedure COVID-19 test in an asymptomatic patient with no specific risk factors for COVID-19 has a very high negative predictive value (NPV). For example, if community prevalence in this population is estimated at 5%, and test sensitivity is conservatively estimated at 75%, NPV (negative test equals true negative) is 98%.

8. Patients with prior positive COVID-19 PCR tests, but who are currently asymptomatic:
    a) Re-testing is not recommended within 90 days of a positive test, due to the persistence of viral RNA that causes positive testing, but that does not reflect contagious virus.
    b) If procedure is needed within this period, proceed without testing, using PPE as described in the Table below for a patient with no known symptoms of COVID-19.
    c) After 90 days, follow usual testing protocol as above.

D. **OR/Procedure Rooms**
1. All rooms in these areas are positive pressure and will be maintained as such for COVID-19 patients.
2. The door to the OR/procedure room should be kept closed to the extent possible.
3. Minimize the number of staff in the room.
4. Limit the equipment laid out to what is necessary, and keep items covered until needed.
5. Minimize the need to pass items in/out of the room.

E. **OR/Procedure Room Staff Attire:**
1. Scrubs and surgical gowns should be worn per usual practice.
2. For suspected/confirmed COVID-19 patients, staff who are not scrubbed in (e.g., circulator) will wear an isolation gown per isolation protocols.
3. Visibly soiled scrubs should be changed per usual protocol. Caregivers do not need to change scrubs more frequently than usual.

F. **PPE Guidance**
1. In general, suspected/confirmed COVID-19 patients should be cared for using droplet/contact precautions. While a significant minority (up to 40%) of patients infected with COVID-19 may be asymptomatic, their ability to infect others (given absence of cough) appears to be low in healthcare settings where PPE is routinely used. See overall PPE guidance for recommendations.
2. Procedures will be risk-stratified by patient type and likelihood of aerosolization during the procedure (Table). Intubations are highest risk among these procedures based on available data.
3. All caregivers are expected to re-use PPE and/or wear for extended use, per PPE Guidance.
4. All staff who use N95s are expected to submit their N95 for reprocessing, as long as it is intact and non-soiled, per N95 re-processing guidance.

G. **Airway Management**
1. Intubation is an AGP requiring airborne PPE for the providers who are performing the intubation. Other caregivers should remain outside the room if possible; if required to be in the room, wear PPE as for contact/droplet precautions (mask, eye protection, gown, gloves), and remain at least 6 feet away when possible. This guidance is specific to adult patients.
2. Suspected/confirmed COVID-19 patients, once intubated, are considered to have source control due to the use of viral filters, and droplet/contact precautions are appropriate. Maintain airborne precautions for 1 hour after the intubation, assuming no other AGPs are being performed, whether the intubation occurred in a negative pressure or regular room.
3. Transition between manual resuscitator/ICU/anesthesia ventilators with viral filter in place.
4. For non-COVID patients, usual procedures can begin as soon as the intubation is completed with no airborne or other precautions.

Guidance for Non-procedure Areas

A. Suspected/confirmed COVID-19 patients

1. AGPs should be performed under airborne precautions, with all staff following current PPE guidance (Table).
2. Use a negative pressure room if available; if not available, use a standard room with the door closed.
3. Minimize AGPs and staff present in the room if possible.
4. Maintain airborne precautions during and for 1 hour after AGPs.

B. Non-COVID-19 patients

1. Due to possibility of splashing, surgical masks and eye protection (safety glasses, goggles or face shields) should be used for all AGPs with the exception of intubations (see above).
    a) Caregivers performing intubation will utilize practices to minimize splashing and aerosolization to the extent possible (rapid sequence induction, paralysis, and/or draping).
    b) The room door may remain open.
    c) Minimize number of caregivers in room.
    d) Other caregivers who must remain in the room should utilize droplet precautions (mask with eye protection).
    e) To the extent possible, other caregivers should remain at least 6 feet away during the intubation but may assist if needed without changing PPE.
    f) After intubation, no additional PPE is needed beyond standard precautions, unless required per transmission-based precautions for an individual patient.

Table. Procedure-Specific Risk Stratification and PPE Guidance

Patient Type	Procedure	Risk Level	PPE Needed	Examples
Suspected/confirmed COVID-19 patient (newly diagnosed)	All AGPs	1	N95/face shield or PAPR for all staff	All AGPs
Emergent, undifferentiated patient (**history of symptoms and/or risk unable to be obtained**)	All AGPs or other procedures where patient may require airway management	2	N95/face shield or PAPR for all staff	See respiratory guidance Chest tube insertion
Patient with no known symptoms of or risk for COVID-19, regardless of COVID-19 test result (asymptomatic or hospitalized for another reason)* **OR** prior COVID+, now asymptomatic (within 90d)	Invasive procedures directly involving airway, oropharynx, sinuses AND procedures with realistic potential to require emergent intubation during procedure¥	2	N95/face shield or PAPR for all staff	• Nasopharyngeal/oropharyngeal/ENT • Oral surgery/dental procedures • Tracheostomy insertion or decannulation • Bronchoscopy • Lung resections with planned or potential to enter major airways or trachea
Patient with no known symptoms of or risk for COVID-19 (asymptomatic or hospitalized for another reason) **and negative COVID-19 testing*** **OR** prior COVID+, now asymptomatic (within 90d)	Non-invasive procedures involving the airway, oropharynx, sinuses; other procedures not directly involving airway, oropharynx, sinuses; **patient requires intubation in OR/procedure room**	3	N95/face shield for intubating provider(s); surgical mask/face shield for all other staff€	• General surgery • Laparoscopy • C-section • Tracheostomy care, including open suctioning • Upper GI endoscopies, TEE, Interventional Cardiology and Interventional Radiology¥
	Procedures not directly involving airway, oropharynx, sinuses; patient does not require intubation, or **is already intubated**	4	Standard precautions	• GI endoscopies, Interventional Cardiology and Interventional Radiology when patient is already intubated • All other procedures not listed under level 2 above
Patient with no known symptoms of or risk for COVID-19 (asymptomatic or hospitalized for another reason) **but COVID-19 test pending or not done**	Non-invasive procedures involving the airway, oropharynx, sinuses; other procedures not directly involving airway, oropharynx, sinuses; **patient requires intubation in OR/procedure room**	2	N95/face shield or PAPR for all staff	• Upper GI endoscopies, TEE, Interventional Cardiology and Interventional Radiology if there is a reasonable possibility of need for critical intervention mid-procedure¥
	Procedures not directly involving airway, oropharynx, sinuses; patient does not require intubation, or **is already intubated**	4	Standard precautions	• GI endoscopies, Interventional Cardiology and Interventional Radiology when patient is already intubated • All other procedures not listed under level 2 above

Notes:

** A negative pre-procedure COVID-19 test in an asymptomatic patient with no specific risk factors for COVID-19 has a very high negative predictive value (NPV). For example, if community prevalence in this population is 5%, and sensitivity of test is conservatively estimated at 75%, NPV (negative test equals true negative) is 98%.*

[¥] Controlled intubation should be considered prior to procedure.

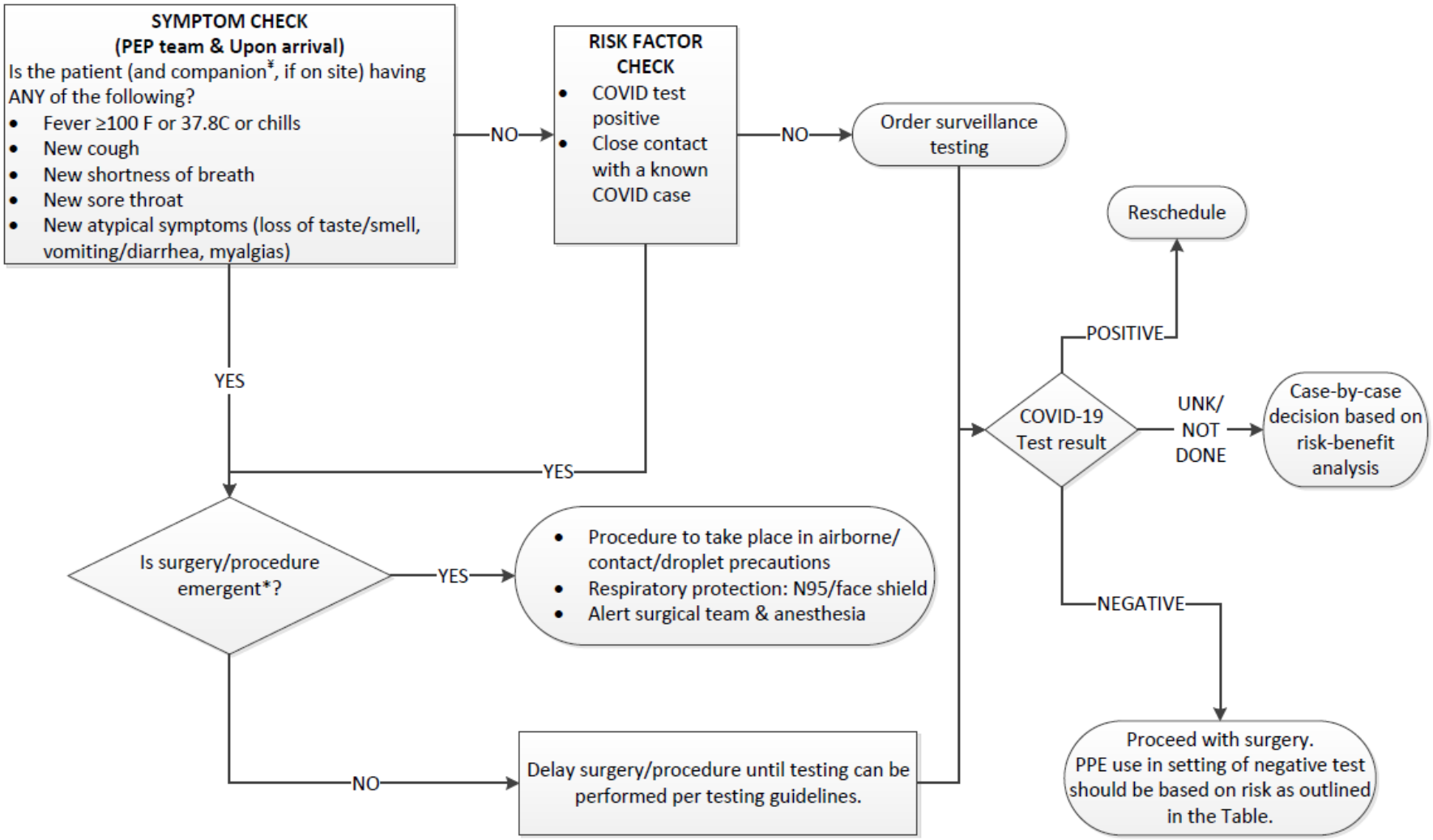
[€] To minimize risk related to potentially undiagnosed COVID-19 patients, Anesthesia providers have modified their intubation practices to minimize splashing/aerosolization. Therefore, while other caregivers should remain either outside the room or at least 6 feet away whenever possible, the risk related to intubation of patients not suspected of COVID-19 is such that droplet/contact PPE is appropriate. It is not necessary to wait outside the room for any designated length of time after intubation of a non-COVID patient.

*** If patient has remained hospitalized since last negative COVID-19 test and does not have new symptoms, repeat testing is not indicated.*

APPENDIX

COVID-19 Patient Assessment Protocol for Scheduled Procedures

7.22.2020



*Per clinical discretion of the surgeon/proceduralist. No procedures should be cancelled prior to this discussion.
¥ If companion screens positive for symptoms, he/she cannot be allowed in building, but can be instructed to wait in car or go home.
Infection Prevention is available for infection control questions via Vocera or the page operator (733-1900).