Date: 5/10/2020

Question: Can we rely on preoperative testing for SARS-COV-2 to safely restart elective procedures?

As surgical centers and hospitals prepare to resume elective surgery, several important questions and controversies have arisen. Should operative patients be screened pre-operatively? What is the optimal personal protective equipment (PPE) for surgical staff? This FAQ addresses the drawbacks of relying on preoperative testing alone to resume routine surgical procedures.

While a positive COVID-19 test result is helpful in deferring elective surgeries, **a negative result does not rule out presence of SARS-COV-2 virus.** Some asymptomatic patients may test **false-negative** due to sampling error or viral shedding below the test's detectable threshold at time of testing, but develop symptoms and COVID-19 infection a few hours later. A false negative result may provide OR staff with a false sense of security leading to relaxing of respiratory precautions, leading to possible COVID-19 exposures of OR staff. Additionally, sensitivity of COVID-19 PCR testing can be further impacted by **test performance** at local sites and **poor sample collection techniques,** as low as 31% for pharyngeal swabs and 60% for nasal swabs**.**[1]

False negatives are especially important in areas where the community prevalence of COVID-19 is high or even moderately high. Given the uncertainties of testing, the high prevalence of the disease in some regions, and asymptomatic shedding of virus, we should assume some degree of risk even with negative pre-operative results. Until more is known, universal OR respiratory precautions should be combined with pre-operative testing to reduce the risk of exposure to OR personell.[2]

For questions related to use of serology prior to surgery, please refer to previous FAQ on serology. Until more evidence about protective immunity is available, serology should not be used for decisions related to preoperative testing, staffing or PPE. As we get more data on serology, we will update this recommendation. **To reiterate: preoperative testing is useful (ideally no more than 3 days before surgery) if the test is positive but universal use of respiratory precautions by OR personnel is still required for all patients undergoing elective surgery at this time**:

OR/procedural staff PPE for positive COVID 19 PCR tests or for PUI or emergency procedures: For patients with positive tests, the provider should carefully review indications for the procedure and consider deferring the procedure if possible. If the procedure is necessary, it should proceed with

- N95 respirator
- Eye protection: faceshield or goggles
- Double gloves
- Gown
- Shoe/boot covers

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Exceptions to this:

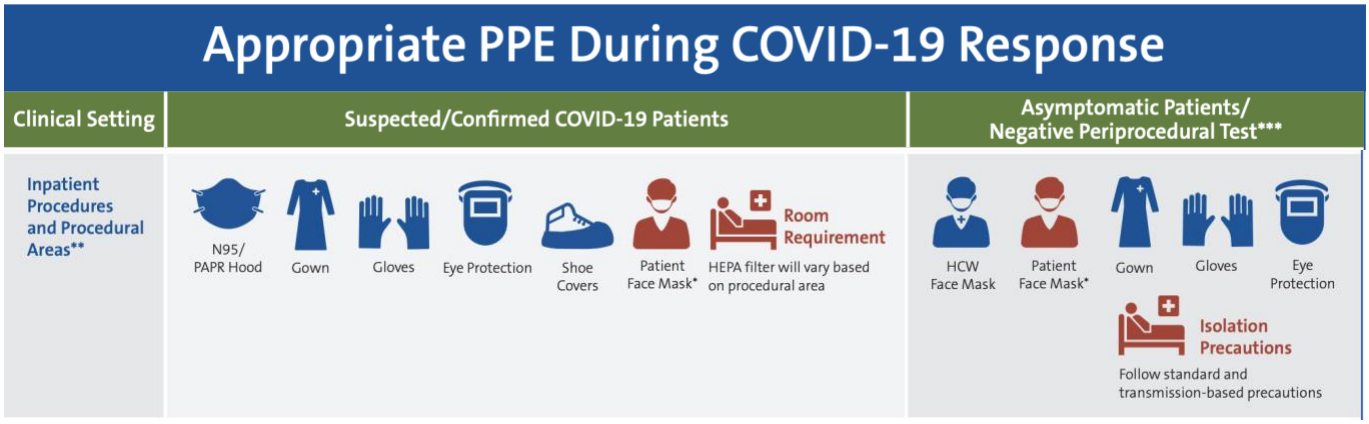
- The anesthesiologist is considered airway primary and should wear a Powered Air-Purifying Respirator (PAPR), Tyvek hood/shroud, fluid resistant surgical gown, and full ortho boot covers. The CRNA should wear the same PPE as the anesthesiologist, but may wear N95 + face shield instead of a PAPR, pending availability of PAPR units and clinical situation.
- A surgical mask should be worn underneath a PAPR to prevent sterile field contamination rather than the N95 mask.
- Specific airway cases (bronchoscopy, tracheostomy, etc.) when a member of the surgical team may also need to wear a PAPR.

Other recommendations:

- Within the patient room, a disposable facemask should be placed on the patient to contain secretions prior to transport to OR. If patients are on high-flow oxygen, place the oxygen mask over the disposable facemask.
- To the extent possible, equipment that is not essential to carrying out the case should be removed from the OR.
- Case carts should be kept out of the OR if possible.
- Disposable equipment should be used whenever possible in the OR.
- Portable HEPA filter units are not routinely required as the air exchange rate in ORs should be sufficient to remove airborne contaminants quickly.
- The anesthesia circuits should already pre-fitted with HEPA filters.
- OR staff should be limited to just those who are absolutely required to safely carry out the procedure. Learners and extra assistants who are not essential should be excused.
- Personal cloth hats should not be worn in the OR.
- **Please review detailed SOP for OR transfer of known or suspect COVID-19 patient here:**
  - Protocol for Perioperative Management of Surgical Procedures for COVID-19
  - Periop COVID-19 Flow Chart

OR/procedural staff PPE for negative COVID 19 PCR tests*:

- Surgical mask
- Eye protection: faceshield or goggles
- Gown
- Gloves



** These PPE recommendations apply to surgeries and the following procedures: bronchoscopy, transesophageal echocardiography, electrical cardioversion, electrophysiology procedures requiring general anesthesia, electroconvulsive therapy, upper and lower endoscopy, fluoroscopically guided enteric tube placements, and interventional radiology procedures requiring anesthesia or in patients with a tracheostomy.
***Additional PPE or specific hand hygiene practices may be required for isolation status (e.g., MRSA, VRE, C. diff).

In addition, we recommend calculating PPE burn rate[3] for the OR/peri-op platform to see if facilities have adequate supply to perform these procedures while still being able to care for COVID-19 patients. OR PPE burn rate should account for

- The number of staff that are needed in the OR for specific types of cases
- The PPE required for each staff member for each type of case
- The number of proposed cases for at least one month

Please review additional DICON guidance documents (review DICON website for regular updates):

- COVID Testing for Pre- Surgical Patients
- Pre-Procedural Guidelines for COVID-19 Testing and PPE Use
- Air Exchanges Per Hour
- Guidance for Procedural Areas Caring for Suspected or Confirmed COVID-19 Patients
- Appropriate PPE during COVID-19 Response
- Recommended PPE for Outpatient Management of Asymptomatic Patients

Lastly, governance committees at each hospital can make final decisions related to pre-op testing and PPE in conjunction with local infection preventionist, this DICON FAQ is only intended to provided guidance.

References:

1. Wang W, Xu Y, Gao R, et al. Detection of SARS-CoV-2 in different types of clinical specimens. JAMA. Published online March 11, 2020. doi:10.1001/jama.2020.3786
2. Livingston EH. Surgery in a Time of Uncertainty: A Need for Universal Respiratory Precautions in the Operating Room. JAMA. Published online May 07, 2020. doi:10.1001/jama.202
3. https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/burn-calculator.html