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American Society of Anesthesiologists and the Anesthesia Patient Safety Foundation Statement on Perioperative Testing for the COVID-19 Virus

Patients who are infected with SARS-CoV-2, the virus responsible for the COVID-19 disease, have higher perioperative morbidity and mortality.⁽¹⁻⁵⁾ Unexpected progression to acute respiratory distress syndrome, cardiac injury, kidney failure, and even death has been observed in patients infected with SARS-CoV-2 who have undergone surgical procedures.^(1, 6) Additionally, aerosolizing procedures place operating room staff at greater risk of being infected with SARS-CoV-2. As a result, a robust screening and testing program to detect SARS-CoV-2 is essential for the safety of patients, health care workers, and the general public.

Screening for SARS-CoV-2 via careful symptom history is important, yet imperfect.^(7,8) There is high inter-patient variability in disease presentation and symptom severity. Screening should include an assessment of:⁽⁹⁾

- Exposure to someone diagnosed with COVID-19 in the past 14 days, or
- Unexplained fever, cough, shortness of breath, chills, muscle pain, headache, sore throat, and/or new loss of taste or smell, nausea, vomiting, or diarrhea, have been reported.

The ability of testing to detect SARS-CoV-2 is dependent on sampling technique, fluid sampled, the test performed and the timing of the test relative to the infectious course.⁽¹⁰⁾ The reported sensitivity of SARS-CoV-2 testing using polymerase chain reaction (PCR) testing is approximately 70-95 percent, meaning that up to 30 percent of infected patients will be reported as free of the virus.⁽¹¹⁾ Viral transmission may occur up to three days before patients become symptomatic. Adult patients who have had a mild or moderate case of COVID-19 do not have replication-competent virus beyond 10 days following symptom onset. However, replication-competent virus has been identified between 10 and 20 days post-symptom onset in immunocompromised patients and those who have had a severe-case of COVID-19. Viral particles may be detected by PCR for up to three months following infection; however, these particles are presumed to be inactive.⁽¹²⁾

The Centers for Disease Control and Prevention (CDC) guidance “Discontinuation of Transmission-Based Precautions and Disposition of Patients with COVID-19 in Healthcare Settings (Interim Guidance) August 10, 2020 Revision” advises that transmission-based precautions may be discontinued by health care facilities in patients with mild to moderate illness who are not severely immunocompromised once 10 days have passed since symptom onset, 24 hours have passed since last fever without the use of anti-pyretic medications, and improvement in symptoms. Patients who have severe illness can have their transmission-based precautions discontinued when at least 10 days, and up to 20 days, have passed since symptom onset; 24 hours have passed since last fever without the use of anti-pyretic medications; and there is improvement in symptoms. Retesting patients is no longer a recommended approach for determining when someone is no longer infectious because of the prolonged course of viral shedding.

Antibody testing does not have a role in perioperative screening and risk stratification. Antibodies develop in the second week of symptoms and not all patients who are infected with SARS-CoV-2 develop detectable antibodies.^(13,14) Additionally, antibody tests have the potential of cross-reaction with other coronaviruses, resulting in false-positive results.^(14,15) As a result, antibody testing should not be performed during routine preoperative screening.

Recommendations:

A population risk assessment identifying the prevalence of SARS-CoV-2 should be reviewed. When there is local or regional presence^(16, 17) of SARS-CoV-2:

- 1) All patients should be screened for symptoms prior to presenting to the health care facility. Patients reporting symptoms should be referred for additional evaluation. All other patients should undergo nucleic acid amplification testing (e.g., PCR tests) prior to undergoing non-emergent surgery.

- 2) If a patient tests positive for SARS-CoV-2, elective surgical procedures should be delayed until the patient is no longer infectious and has demonstrated recovery from COVID-19. A patient may be infectious until either:
- a. CDC non-test-based strategy in mild-moderate cases of COVID-19:
 - i. At least 24 hours since resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms, and
 - ii. At least 10 days since symptoms first appeared.
 - b. CDC non-test-based strategy in severe cases of COVID-19 or in immunocompromised patients:
 - i. At least 10 days and up to 20 days have passed since symptom onset,
 - ii. At least 24 hours since resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms, and
 - iii. Symptoms (e.g., cough, shortness of breath) have improved.

1. Aminian A, Safari S, Razeghian-Jahromi A, Ghorbani M, Delaney CP. COVID-19 outbreak and surgical practice: unexpected fatality in perioperative period. *Ann Surg*. 2020.
2. Tuech J-J, Gangloff A, Di Fiore F, Michel P, Brigand C, Slim K, et al. Strategy for the practice of digestive and oncological surgery during the Covid-19 epidemic. *Journal of Visceral Surgery*. 2020.
3. Kayani B, Onochie E, Patil V, Begum F, Cuthbert R, Ferguson D, Bhamra JS, Sharma A, Bates P, Haddad FS. The effects of COVID-19 on perioperative morbidity and mortality in patients with hip fractures: a multicentre cohort study. *The bone & joint journal*. 2020 Sep 14;102(9):1136-45.
4. Knisely A, Zhou ZN, Wu J, Huang Y, Holcomb K, Melamed A, Advincula AP, Lalwani A, Khoury-Collado F, Tergas AI, St Clair CM. Perioperative Morbidity and Mortality of Patients With COVID-19 Who Undergo Urgent and Emergent Surgical Procedures. *Annals of Surgery*. 2020 Oct 14.
5. Liang W, Guan W, Chen R, Wang W, Li J, Xu K, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. *The Lancet Oncology*. 2020;21(3):335-7.
6. Lei S, Jiang F, Su W, Chen C, Chen J, Mei W, et al. Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection. *EClinicalMedicine*. 2020:100331.
7. Gudbjartsson DF, Helgason A, Jonsson H, Magnusson OT, Melsted P, Norddahl GL, et al. Spread of SARS-CoV-2 in the Icelandic Population. *New England Journal of Medicine*. 2020.
8. Sutton D, Fuchs K, D'Alton M, Goffman D. Universal screening for SARS-CoV-2 in women admitted for delivery. *New England Journal of Medicine*. 2020.
9. Centers for Disease Control and Prevention. Symptoms of Coronavirus [Available from: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>].
10. He X, Lau EH, Wu P, Deng X, Wang J, Hao X, et al. Temporal dynamics in viral shedding and transmissibility of COVID-19. *Nature Medicine*. 2020:1-4.
11. Wang W, Xu Y, Gao R, Lu R, Han K, Wu G, et al. Detection of SARS-CoV-2 in Different Types of Clinical Specimens. *JAMA*. 2020.
12. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/duration-isolation.html>
13. Zhao J, Yuan Q, Wang H, Liu W, Liao X, Su Y, et al. Antibody responses to SARS-CoV-2 in patients of novel coronavirus disease 2019. *Clinical Infectious Diseases*. 2020.
14. Okba NM, Muller MA, Li W, Wang C, GeurtsvanKessel CH, Corman VM, et al. SARS-CoV-2 specific antibody responses in COVID-19 patients. *medRxiv*. 2020.
15. World Health Organization. Advice on the use of point-of-care immunodiagnostic tests for COVID-19 [updated 4/8/2020. Available from: <https://www.who.int/news-room/commentaries/detail/advice-on-the-use-of-point-of-care-immunodiagnostic-tests-for-covid-19>].
16. Centers for Disease Control and Prevention. Overview of Influenza Surveillance in the United States [Available from: <https://www.cdc.gov/flu/pdf/weekly/overview-update.pdf>].
17. Prevention CfDCa. Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings [updated 5/18/2020. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>].