

Elective Surgery and COVID-19

A Framework for the Untested Patient

Amy C. Lu, MD, MPH*[†]✉ and Alyssa M. Burgart, MD, MA*[‡]

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When presenting for surgery, a patient's SARS-CoV-2 status has important implications for perioperative care, resource allocation, and healthcare worker (HCW) safety. National societies have established principles for elective surgery during the COVID-19 pandemic. These recommend evaluation of prevalence of local cases, availability of COVID-19 testing, supply of personal protective equipment (PPE), and prioritization of cases and scheduling.¹ The perioperative societies' joint statement recognizes the risk of untested patients, stating "If such testing is not available, consider a policy that addresses evidence-based infection prevention techniques, access control, workflow and distancing processes to create a safe environment in which elective surgery can occur."¹

During the COVID pandemic, patients with urgent surgical needs may have proceeded without testing, with guidelines recommending use of appropriate PPE in these circumstances. As SARS-CoV-2 testing becomes widely available, both institutions and front-line HCW may believe that all patients will be tested without exception. Although universal testing is ideal, there may be instances where patients have contraindications or refuse testing. Testing may be contraindicated in a select group of patients, such as those with facial fractures, severely compromised immune systems, patients with intellectual disabilities (ID), sensory integration disorders, or uncooperative pediatric patients. Although some patients may not have the capacity to refuse, they may be physically and emotionally traumatized by forced, awake testing.

Outright testing refusal is expected to be uncommon. Reasons for such refusals are multifactorial and listed in Figure 1A. These may include test discomfort, disbelief in the tests' validity or clinical value, or fear of downstream effects of a positive result, such as required quarantine jeopardizing employment or separation from a newborn at delivery.

Based on consensus agreement from multidisciplinary teams across our health system, we present a thoughtful framework that addresses situations when patients are unable to be tested or refuse SARS-CoV2 testing. Since its development, these guidelines have been successfully employed when our clinical teams have been faced

with patient refusal or inability to test for COVID-19. Our pathway and recommendations emphasize understanding local COVID-19 prevalence and diagnostic testing capabilities, clear messaging to staff and patients, and encourage patient-centered communication skills as essential elements for effectively resuming elective surgery.

ETHICAL CONSIDERATIONS IN THE UNTESTED ASYMPTOMATIC PATIENT

Patients with active COVID-19 infections are at significantly elevated risk for perioperative complications. Therefore, proceeding with surgery without knowing a patient's disease status involves accepting risk based on community disease prevalence rather than patient-specific data. When contraindications to testing exist, an assessment of the risk-benefit ratio is essential, no amount of counseling and education will alter the situation.

Although patients with capacity have an ethical and legal right to refuse testing, they do not have unrestricted access to surgical care. Hospital leadership and clinicians are obligated to approach refusals in a rational and just fashion. Ethical challenges arise in weighing patients' autonomy, access to care, HCWs' duty to care, risk of exposure, and allocating scarce resources. Elective surgery should not automatically be considered unnecessary or optional, recognizing that certain "elective" procedures may progress in acuity and urgency over time.² Surgeries to improve patient functioning that is limited secondary to pain or chronic injury can impact a patient's quality of life and affect their employment status. In contrast, when surgeries may be safely delayed for long periods, an alternative to testing may include strict self-quarantine for a designated period (eg, 14 days) before surgery. This strategy would rely on patient self-control and honesty, which clinicians may find insufficient.

Patients with active COVID-19 infections place perioperative staff at increased risk for contracting the disease, especially during aerosol generating procedures. When an organization allows or encourages operating on untested patients with non-urgent surgical needs, clinicians may question their institution's commitment in maintaining safety for both patients and HCW. Alternatively, if HCW or organizations categorically refuse to treat untested patients, those patients may be harmed. Proactive recognition of an inability to test every patient requires preparation to prevent violations of patients' decision-making rights, prevent harms to patients, reduce avoidable health care worker risk, and mitigate moral injury that may result from intractable conflicts. Surgeons, anesthesiologists, and perioperative staff have significant expertise to work together to create a pathway that thoughtfully takes into consideration the risks and benefits of surgery in the untested patient with that of HCW safety.

POTENTIAL CONTRAINDICATIONS AND REASONS FOR TESTING REFUSAL

Patients' reasons for avoiding testing are expected to be highly variable. These refusals may mirror other infectious diseases, like human immunodeficiency virus. These include recent history of a

From the *Department of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine, Stanford University, Stanford, California; †Quality, Safety and Clinical Effectiveness, Stanford Health Care, Stanford, California; and ‡Stanford Center for Biomedical Ethics, Stanford University, Stanford, California.

✉aclu@stanford.edu.

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Reason	Example	Suggested Actions
Contraindication to testing	Medical condition creates contraindication to testing (e.g., immunocompromised patients, facial fractures) Intellectual disabilities, sensory processing differences, or pediatric patient where testing may cause harm or have inability to tolerate test	Refusal may be mitigated if less invasive testing is available. Consider alternative tests that do not require nasopharyngeal swab if results yield sufficient information (e.g., swab from anterior nares, mid-turbinate specimen, saliva testing). In cases where patient (or their surrogate) is willing to consent to testing but only under anesthesia, consider if risk is low enough to proceed and complete testing post-induction.
Patient Refusal	Address conflict with relationship-centered communication skills: notice conflict, raise issues and concerns openly, give full attention, articulate shared interests, brainstorm options that meet both parties' needs ⁷ .	
Test is uncomfortable	Patient expresses concern regarding test discomfort Trauma from prior healthcare experience	Support patients, parents, caregivers, and test administrators to minimize trauma or discomfort regarding tests. Refusal may be mitigated if less invasive testing available.
Testing is unnecessary	Asymptomatic patient feels well, skeptical of value to test Patient has a previous negative test, skeptical of value of retesting	Provide education regarding risk of asymptomatic carrier status and testing validity and follow-up. Explore if previous negative test results are sufficient (e.g. approved testing site and timeframe). Highlight rationale for repeat testing and explore misunderstandings.
Results are not valid or clinically significant	Patient doubts test validity or is concerned about false negative	Offer education regarding overall value of testing, validity of the tests being used, and clinical significance of test results.
Test results will not impact care plan	Patient unaware of increased morbidity and mortality from latent SARS-CoV-19 infection during perioperative period. Patient is unaware not testing will require increased PPE to protect HCW.	Offer targeted preoperative education (i.e., website, counseling, telehealth) to increase patient understanding of the value of testing for patients and HCW. Inform patient of risks of time for HCW to don PPE, etc. and potential impact on emergency interventions like resuscitation.
Testing requires travel	Inability to travel to testing site before day of surgery	If available, consider rapid testing on day of surgery for patients who might otherwise need to travel long distances.
Test will be costly	Patient unaware of the CARES and Families First Coronavirus Relief Acts that ensures free testing. Subsequent care for COVID-19 patients is not universally covered.	Ensure patient education regarding their medical insurance coverage for testing. Patient may benefit from financial counseling
Testing will have negative impact on care	Positive test leads to surgical case cancellation Concern that positive test may lead to social stigma, isolation, and lack of access to resources. Fear of mother and baby separation, impact on bonding and breastfeeding.	Ensure patient has appropriate follow-up if test result is positive Acknowledge concerns and reassure patient. Provide resources for social support and additional follow-up post-discharge Explore and acknowledge patient's concerns. Ensure patient understands the impact of positive results to patient and infant, during hospitalization and at discharge.

A

FIGURE 1. A, Reasons and suggested actions for absence of preoperative SARS-CoV-2 Testing. B, Pathway of patient refusal of COVID-19 testing.

negative test, self-perception of low risk, preference to remain unaware of their diagnosis, and concern for confidentiality.³ Patients with a history of trauma, ID, or sensory integration differences may be fearful of the experience of testing. Some patients may have contraindications to the available test. Potential reasons patients may

refuse or be unable to complete testing and suggested actions to address these issues are outlined in Figure 1A. An informed refusal requires that patients or their surrogates understand the relevant benefits and burdens of testing, including to themselves and HCWs. If there is a doubt that the refusal is an informed one, reasons for

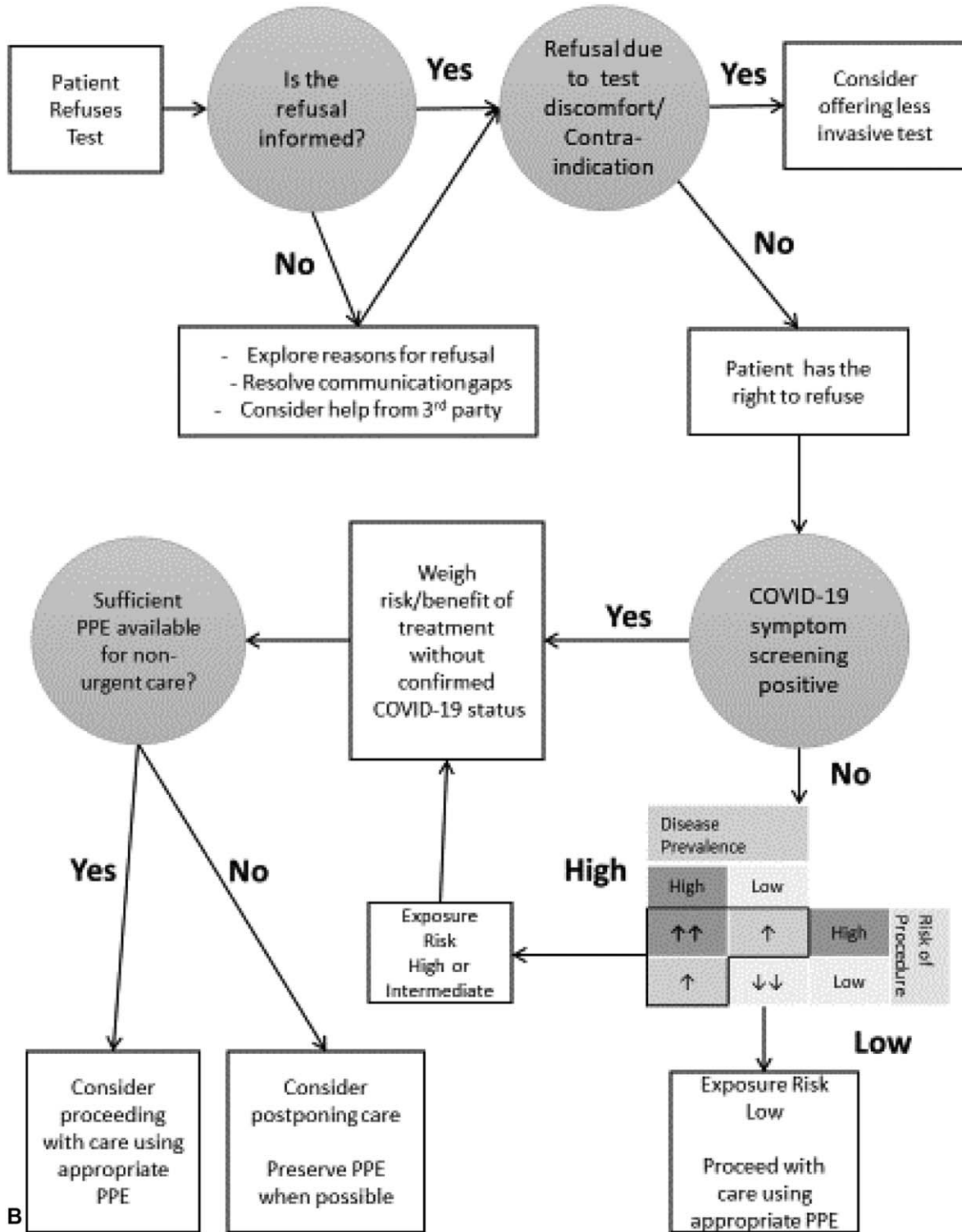


FIGURE 1. (Continued).

refusal should be actively explored using a pathway emphasizing relationship-centered communication skills (Fig. 1B). It may be possible to remove barriers and facilitate preoperative SARS-CoV-2 testing. In other patients, their refusal will remain steadfast.

ORGANIZATIONAL TOOLS: EDUCATION AND PARTNERSHIP FOR INSTITUTIONS, PATIENTS, AND STAFF

When SARS-CoV-2 testing results cannot be obtained preoperatively from an asymptomatic patient, a multitude of unanticipated issues and questions may arise for both hospitals and HCWs. These include the following concerns:

- What is the likelihood that an asymptomatic patient will test positive?
- What resources are necessary to care for patients with both positive and negative SARS-CoV-2 results? Are these resources available?
- Can the procedure be safely performed without completion of the test?
- How are other untested patients (emergency procedures) currently managed?
- If the burdens of proceeding are significant, can the procedure be safely postponed or not performed?
- Do HCW feel supported in their ability to work and care for the patient?⁴
- If a HCW refuses to treat an untested patient, how will the care of the patient be addressed? What are HCW rights to refuse to participate?

Health systems should develop operational testing policies for patients and staff based on their local SARS-CoV-2 diagnostic testing capabilities. This includes proactive preparation for untested patients (Fig. 1B). For relatively low risk procedures in low prevalence geographic areas, hospitals may choose to move forward with surgery in untested asymptomatic patients or patients whose test results are not yet reported. The evolving nature of the availability, accuracy, and evidence of testing should be clearly communicated to all patients and staff.

Creating a systematic approach based on clear communication, education, and feedback enables organizations to address concerns of patients and HCWs. Flexibility in adjusting to future COVID-19 surges remains important as healthcare organizations work on thoughtfully resuming elective procedures. Health systems should adopt a variety of techniques to address the concerns of their staff and patients, including:

- Communicate bidirectionally with staff, patients, and other stakeholders
- Proactively address common concerns by ensuring patients and staff have access to reliable and accurate information
- Remain vigilant in working with local public health departments to understand prevalence
- Ensure access to PPE and conditions of appropriate use for all patients

CLINICIAN TOOLS: CONFLICT RESOLUTION AND RELATIONSHIP-CENTERED COMMUNICATION

HCWs with effective communication skills and education regarding their hospital's diagnostic testing capabilities are more likely to convince patients to consider testing. Conflict between patients and clinicians is common, making effective de-escalation a core skill. Naming patient emotion is a powerful tool to diffuse tension and build trust. Active listening to identify and describe the patient's concerns supports a sense of patient autonomy.^{5,6} Equally

important are the avoidance of coercion (or perception of coercion) against patients considering testing refusal. If a clinician continues to worry that the patient's refusal is not informed, consider engaging a third-party facilitator, such as a colleague in risk management, ethics, or chaplaincy.

Evidence-based options exist for clinicians to address untested patients and are listed Figure 1A. These include ensuring any patient refusal is truly informed, discussing the perioperative risks and benefits of testing, and the infectious risk to HCWs and other patients. When feasible, ordering less invasive testing is another option that can increase the participation of preoperative testing in asymptomatic patients.

OUR EXPERIENCE

Since implementing universal perioperative testing throughout our health system, we successfully deployed the guidelines delineated above with a small number of untested patients due to refusals and contraindications. Patient refusals of testing have included lack of knowledge that a test would be performed, disbelief in the existence of COVID-19, fear of separation of obstetric patient and newborn, and disbelief in individual risk after sheltering-in-place for an extended time. Among our untested patients, several have ID and/or sensory processing differences. A subset of these patients will not tolerate nasopharyngeal testing without physical restraint, risking medical traumatization and injury of the patient, and the HCW safety. When the local infection rate is low and sufficient PPE supplies exist, this unique population may be offered testing after induction of anesthesia. Our experience has been that post-induction testing is an acceptable alternative by the parents and surrogates of patients in this category. This option involves staff to assume increased risk to their own health and utilize a higher level of PPE than they might in a patient who presented with negative test results. Our institution's framework and processes described in Figure 1B have been effectively implemented and adopted in our adult and pediatric populations when patients have refused COVID-19 testing. The pathways have honored patients' rights to autonomy, leading to a reduced number of outright refusals, and maintaining a workforce willing to provide care for the occasional untested patient.

CONCLUSIONS

When implementing a practical and sustainable framework to resuming elective surgeries, hospitals and frontline clinicians should recognize universal preoperative SARS-CoV-2 testing may not be feasible for asymptomatic patients. The evolving nature of the availability, accuracy, and evidence regarding testing will need to be clearly communicated when emphasizing COVID-19 testing for asymptomatic patients presenting for elective surgery. Hospitals will benefit from proactive planning for these potential challenges in a rational way that honors patient autonomy, protects HCWs from undue exposure risk, and upholds our responsibilities to public health.

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