



Infection Prevention and Control (IPAC) for Scheduled Surgeries and Procedures During the COVID-19 Pandemic

Recommendations from Ontario Health

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Version History

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Introduction

This document was developed by the *COVID-19 Response: Infection Prevention and Control for Scheduled Surgeries and Procedures Committee*. The committee was convened to respond to urgent issues surrounding the use of personal protective equipment (PPE) and other infection prevention and control (IPAC) measures for scheduled surgeries and procedures during the COVID-19 pandemic. Chaired by Dr. Chris Simpson, the committee includes expertise from health system leaders in surgery, anesthesiology, IPAC, infectious diseases, acute care, occupational health and safety, and emergency medicine. See [Appendix A](#) for a full list of committee members.

The recommendations in this document apply to all hospital-based scheduled surgeries and procedures, but may be adopted by other health care facilities. During the pandemic, emergent and urgent surgeries and procedures have been continuing, using applicable IPAC. However, between March 15 and May 26, 2020, some urgent surgeries and procedures were reduced and scheduled surgeries and procedures were deferred.¹ Recently, Ontario Health released a plan outlining the criteria and processes for reintroducing scheduled surgeries and procedures.² In addition, the Chief Medical Officer of Health revoked and replaced Directive #2 for Health Care Providers on May 26, 2020, to support the gradual restart of all deferred and non-essential and elective services.¹

This document offers evidence-informed recommendations on IPAC measures, including the use of PPE, for processes before, during, and after scheduled surgeries and procedures performed in hospitals amid the COVID-19 pandemic, with the goal of ensuring the safety and protection of health care workers and patients. The recommendations include the following:

- 1. All patients should be screened for COVID-19 and physically distance or self-isolate where feasible, before a scheduled surgery or procedure**
- 2. A regional or sub-regional approach to pre-surgical and pre-procedural COVID-19 testing should be taken for scheduled surgeries and procedures in hospital, based on local epidemiology**
- 3. Scheduled surgeries or procedures should only proceed for patients who have passed screening and/or tested negative if required for COVID-19. They should also have adhered to physical distancing or have self-isolated where feasible**
- 4. Surgical teams should wear PPE appropriate for use with patients who have been cleared for their surgery or procedure through screening and/or testing, and who have adhered to physical distancing or have self-isolated where feasible**

This document is intended to be used in conjunction with existing IPAC and occupational health and safety protocols in hospitals, and with the associated documents on PPE use and IPAC measures during the COVID-19 pandemic that were previously released by Ontario Health, including:

- [PPE Use During the COVID-19 Pandemic³](#)
- [Optimizing the Supply of Personal Protective Equipment During the COVID-19 Pandemic⁴](#)

Health care organizations must always ensure compliance with the [Occupational Health and Safety Act](#), specifically the [Health Care and Residential Facilities Regulation](#) under the Act.

This is a living document. As the evidence evolves on this topic, the committee will continue to evaluate innovations in a timely way and update this document accordingly.

Definitions for terminology used in this document can be found in the glossary of terms in [Appendix B](#).⁵⁻⁸

Initial Steps Before Restarting Scheduled Surgeries and Procedures

Before the resumption of scheduled surgeries and procedures, your organization should review the recommendations developed by the *COVID-19 Response: Surgical and Procedural Planning Committee*, chaired by Dr. Chris Simpson: [A Measured Approach to Planning for Surgeries and Procedures During the COVID-19 Pandemic](#).² The document lays out the ethical principles, criteria, and process for the reintroduction of scheduled surgeries and procedures in hospitals. Among other criteria:

- Hospitals will use the ethical principles of proportionality, non-maleficence, equity, and reciprocity to guide decisions to increase surgical and procedural activities during the COVID-19 pandemic
- Hospitals should follow a fair process for case prioritization that is grounded by a set of ethical principles as part of the implementation
- Hospitals will formulate and implement a plan to continually monitor the prevalence of COVID-19 in their communities using existing data sources available to them, and to evaluate conditions within their hospital (such as staffing, PPE supply) to determine the continued feasibility of performing scheduled surgeries and procedures
- Hospitals should develop a plan for stopping scheduled surgeries and procedures if monitoring shows it is no longer feasible to continue with them
- Hospitals will need to develop a plan for addressing pre-operative COVID-19 diagnostic testing (where appropriate, in consultation with local IPAC). This includes capability for and access to local COVID-19 testing or a protocol for pre-operative self-isolation

Core Assumptions

- Hospitals will only be resuming scheduled surgeries or procedures if they have met the criteria set out in [A Measured Approach](#) (e.g., monitoring COVID-19 prevalence, stable supplies of PPE and medications, ability to ramp down if necessary)
- Scheduled surgeries and procedures should only proceed for patients who have passed screening and/or tested negative if required for COVID-19
- Scheduled surgeries and procedures should **not** proceed for patients with suspected or confirmed COVID-19
- The pandemic and its impacts in Ontario may last many months to years

- Regular/routine IPAC measures are already in place and these recommendations provide COVID-19–specific IPAC actions
- Prevalence of COVID-19 and testing vary across the province
- COVID-19 testing, treatment, prevention, evidence, and protocols continue to evolve
- Hospitals are continually monitoring COVID-19 transmission in their communities, as well as continually monitoring and assessing their own capacity to perform scheduled surgeries and procedures

Guiding Principles

The recommendations in this document are based on the following principles:

- **Minimizing risks**—The recommendations aim to minimize the potential risk of COVID-19 transmission to both patients and health care workers that is associated with the provision of surgical and procedural care in hospitals²
- **Ensuring the safety of health care workers**—The recommendations are designed to protect health care workers³
- **Responsible stewardship and optimizing the supply of PPE**—The recommendations aim to ensure the responsible stewardship of PPE and support health care organizations and health care workers in making evidence-based decisions for optimizing their supply of PPE⁴
- **Enabling the resumption of scheduled surgeries and procedures**—The recommendations outline processes for decision-making, IPAC, and PPE preservation that balance the needs of patients for care; the need to protect hospital staff, other patients, and the community; and the need of hospitals to effectively manage their processes for surgeries and procedures
- **Providing high-quality care**—The recommendations seek to support the provision of high-quality care that is patient-centered, timely, safe, effective, efficient, and equitable

Pre-surgical and Pre-procedural COVID-19 Screening and Testing Recommendations

Evidence suggests that surgery may accelerate and exacerbate COVID-19 disease progression⁹ and patients with the virus have higher perioperative morbidity and mortality.¹⁰⁻¹³ For patients with suspected or confirmed COVID-19, it is recommended that their scheduled surgery or procedure be postponed until their illness is resolved.^{14,15}

Accordingly, it is important to develop screening and, where appropriate, testing protocols to determine the patient’s COVID-19 risk status before any scheduled surgery or procedure.

Pre-surgical and Pre-procedural COVID-19 Screening

Recommendation 1: All patients should be screened for COVID-19 and physically distance or self-isolate where feasible before a scheduled surgery or procedure

- Before presenting to the hospital for a scheduled surgery or procedure, all patients should be screened over the phone for COVID-19 and should have adhered to physical distancing or self-isolated where feasible, for the amount of time deemed appropriate based on the latest evidence and local epidemiology,⁸ before their scheduled surgery or procedure
 - Screening should assess the patient’s exposure to COVID-19 and symptoms associated with COVID-19. Please see the Ministry of Health’s [COVID-19 Patient Screening Guidance Document](#) for the most up-to-date screening criteria⁶
 - Public Health Ontario provides a definition and guidance on physical distancing. Please see Public Health Ontario’s [Physical Distancing](#) fact sheet for the most up-to-date guidelines¹⁶
 - Public Health Ontario provides guidance on self-isolation. Please see Public Health Ontario’s [How to Self-Isolate](#) fact sheet for the most up-to-date guidelines¹⁷
- Patients who failed COVID-19 screening (e.g., due to recent exposure or if they are exhibiting COVID-19 symptoms) should be further assessed and, where appropriate, referred for testing as per [provincial COVID-19 testing guidance](#).⁸ The scheduled surgery or procedure should be deferred if deemed appropriate by the surgical team as a result of assessment/testing

Pre-surgical and Pre-procedural COVID-19 Testing

Recommendation 2: A regional or sub-regional approach to pre-surgical and pre-procedural COVID-19 testing should be taken for scheduled surgeries and procedures in hospital, based on local epidemiology

While screening is the initial step for patients being considered for scheduled surgeries or procedures, it may sometimes be followed by testing. The extent of community spread of COVID-19 is variable across Ontario. A regional or sub-regional approach to testing before scheduled surgeries or procedures should be adopted, after review of local epidemiology and risk assessment by the COVID-19 Regional or Sub-Regional Steering Committee/Response Table, with inputs from hospitals, public health, and local IPAC. The following recommendations on testing are based on the Ministry of Health’s [COVID-19 Provincial Testing Guidance Update](#)⁸:

Testing before a scheduled (non-urgent/emergent) surgery:

- A regional or sub-regional approach to testing before scheduled surgeries or procedures should be adopted after review of local epidemiology and risk assessment by the COVID-19 Regional or Sub-Regional Steering Committee/Response Table. This approach will take into consideration where the patient has been living as well as the location of the hospital
- For areas with **low** community transmission of COVID-19, testing before a scheduled surgery or procedure is not required

- In areas where community transmission of COVID-19 is **not low**, any patient with a scheduled surgery or procedure should be tested as close as possible to the date of the surgery or procedure, given local testing capacity
- Patients should physically distance, or self-isolate where feasible, before a scheduled surgery or procedure
- In the event of a positive test result, the scheduled non-urgent/emergent surgery or procedure should be delayed for a period of at least 14 days
- As per the Ministry of Health’s [Provincial Testing Guidance](#) document, any patient may get tested if they are concerned that they have been exposed to COVID-19⁸
- COVID-19 testing, treatment, prevention, and evidence continue to evolve and these recommendations will be updated

IPAC Considerations Throughout the Surgical or Procedural Workflow

Recommendation 3: Scheduled surgeries or procedures should only proceed for patients who have passed screening and/or tested negative if required for COVID-19. They should also have adhered to physical distancing or have self-isolated where feasible

Recommendation 4: Surgical teams should wear PPE appropriate for use with patients who have been cleared for their surgery or procedure through screening and/or testing, and who have adhered to physical distancing or have self-isolated where feasible

- In hospitals, as in all health care settings, a point-of-care risk assessment (PCRA) must be performed by every health care worker before every patient interaction, including surgeries and procedures.^{18,19} During the COVID-19 pandemic, the PCRA, along with clinical and professional judgement and evidence-based recommendations, supports the selection of appropriate IPAC measures, including PPE,^{20,21} for these interactions
- Based on the pre-surgical/pre-procedural screening and/or testing, **the assumption is that patients undergoing scheduled procedures or surgeries have passed screening and/or tested negative if required for COVID-19. They should also have adhered to physical distancing or have self-isolated where feasible.** Patients who failed COVID-19 screening (e.g., due to recent exposure or because they have exhibited COVID-19 symptoms) should be further assessed and, where appropriate, referred to testing as per [provincial COVID-19 testing guidance](#).⁸ The scheduled surgery or procedure should be deferred if deemed appropriate by the surgical team as a result of assessment/testing
 - Routine IPAC precautions and PPE should generally be used for scheduled surgeries and procedures performed during the pandemic on patients who have passed screening and/or testing protocols and have adhered to physical distancing or have self-isolated where feasible. For additional guidance on PPE use, refer to Public Health Ontario’s [Routine Practices and Additional Precautions In All Health Care Settings](#)²¹

- See Table 1 for a summary of the recommended routine PPE and IPAC measures
- General IPAC considerations for scheduled surgeries and procedures are recommended
 - Minimize the number of people and equipment in the room. For instance, surgeons or personnel who are not needed during aerosol-generating medical procedures (AGMPs) should not enter the room, nor should unnecessary visitors or observers
 - Minimize opening of doors and traffic in and out of the room. Use double doors of the operating room for patient entry/exit only. Use an anteroom for other traffic. Doors should only be opened one at a time²²
 - If clinically appropriate, attempt to minimize aerosols as much as possible through measures such as using alternatives to general anesthesia where appropriate, and using alternative procedures or surgical instruments

Table 1: Recommended infection prevention and control precautions

These apply to scheduled surgeries and procedures performed on patients who have passed screening and/or tested negative if required for COVID-19. They should also have adhered to physical distancing or have self-isolated where feasible

	IPAC recommendations*
Pre-operative care (pre-assessment unit, day surgery)	<ul style="list-style-type: none"> • Surgical/procedure mask
Intubation team (limit personnel to those essential for intubation)	All staff in OR/procedural suite don: <ul style="list-style-type: none"> • Surgical mask • Eye protection • Gown/gloves
Scrubbed (surgical/procedural) team	<ul style="list-style-type: none"> • Surgical mask • Eye protection • Gown/gloves
Circulating (surgical/procedural) team	<ul style="list-style-type: none"> • Surgical mask • Eye protection
Extubation team (limit personnel to those essential for extubation)	All staff in OR/procedural suite don: <ul style="list-style-type: none"> • Surgical mask • Eye protection • Gown/gloves
Post-anesthesia care unit (PACU)	<ul style="list-style-type: none"> • Surgical mask • Eye protection • No need to delay moving patient to post-anesthesia care unit (PACU) following extubation
Air exchange (ventilation)	<ul style="list-style-type: none"> • No need to wait to begin cleaning
Cleaning and disinfection	All cleaning staff in OR/procedural suite don: <ul style="list-style-type: none"> • Surgical mask • Eye protection • Gloves
Disposition	<ul style="list-style-type: none"> • Return patient to the appropriate inpatient unit

*Anesthesiologists and any member of the surgical team may choose a higher level of precautions (e.g., N95 respirators) for AGMPs,²¹ including intubation and extubation, or as deemed necessary as a result of a point-of-care risk assessment. Individual decisions shall be respected by the surgical team but need not change the PPE used by other team members.

Conclusion

The recommendations in this document outline an approach that will allow hospitals to safely resume the surgeries and procedures that many Ontarians need. With an eye to appropriate stewardship of PPE that is grounded in IPAC principles, this approach will balance patients' needs for timely and safe care; the need to protect hospital staff, other patients, and the community; and the hospitals' needs to effectively manage their processes for scheduled surgeries and procedures.

The recommendations herein are up to date as of the most recent release of this document and will be updated as new information becomes available.

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Appendices

Appendix A: COVID-19 Response: Infection Prevention and Control in Scheduled Surgeries and Procedures Committee

COMMITTEE MEMBERSHIP	Title(s) and Institution(s)
Chris Simpson (Chair), BSc, MD, FRCPC, FACC, FHRS, FCCS, FCAHS	Vice Dean (Clinical), School of Medicine, Queen's University Medical Director, Southeastern Ontario Academic Medical Organization Professor, Division of Cardiology, Queen's University Affiliate Scientist, Institute for Clinical Evaluative Sciences
Anne Bialachowski, RN, BN, MS, CIC	Manager, Infection Prevention and Outpatients, St. Joseph's Healthcare Hamilton
Zain Chagla, MSc, MD, FRCPC	Co-Medical Director of Infection Control, St. Joseph's Healthcare Hamilton and Niagara Health System Associate Professor, Department of Medicine, McMaster University
Gerald Evans, MD, FRCPC	Medical Director, Infection Control, Kingston Health Sciences Centre Professor, Department of Medicine, Queen's University
Neva Fantham-Tremblay, MD, FRCSC	Medical Director of Surgery and Head of Obstetrics and Gynecology, North Bay Regional Health Centre
Elizabeth Ferguson, BScN, MScN	Vice President Patient Programs, Flow and Chief Nursing Executive, Royal Victoria Regional Health Centre
Gary Garber, MD, FRCPC, FACP, FIDSA, CCPE	Scientific Lead, Infection Prevention and Control, Public Health Ontario Infectious Diseases Physician, The Ottawa Hospital Professor, Department of Medicine, University of Ottawa and University of Toronto Associate Scientist, Chronic Disease, Ottawa Hospital Research Institute
Jonathan Irish, MD, MSc, FRCSC, FACS	Provincial Head, Surgical Oncology, Ontario Health (Cancer Care Ontario) Clinical Lead, Access to Care, Ontario Health (Cancer Care Ontario)
Steven Jackson, MDCM, MBA, FRCSC	VP Medical Planning and Chief of Staff General Surgeon Mackenzie Health
Tim Jackson, BSc, MD, MPH, FRCSC, FACS	General Surgeon, University Health Network Provincial Surgical Lead, Ontario Health (Quality) President, Ontario Association of General Surgeons
Jennie Johnstone, MD, PhD	Medical Director, Infection Prevention and Control, Sinai Health Assistant Professor, Laboratory Medicine and Pathobiology, University of Toronto
Kevin Katz, MD CM, MSc, FRCPC	Medical Director of Infection Prevention and Control, North York General Hospital Medical Director, Shared Hospital Laboratory Head of Microbiology, Sunnybrook Health Sciences Centre
Sarah Khan, BSc, MD, MSc, FRCPC	Associate Medical Director, Infection Prevention and Control, Hamilton Health Sciences Assistant Professor, Division of Infectious Diseases, Department of Pediatrics, McMaster University

Derek McNally, RN, MM	Executive VP Clinical Services and Chief Nursing Executive, Niagara Health Adjunct Professor, Department of Nursing, Brock University
Dominik Mertz, MD, MSc, FMH(CH)	Medical Director Infection Control, Hamilton Health Sciences Associate Professor, Department of Medicine, McMaster University
Howard Ovens, MD, FCFP(EM)	Chief Medical Strategy Officer, Sinai Health System Professor, Department of Family and Community Medicine, University of Toronto and Sr. Fellow, IHPME Ontario Provincial Lead for Emergency Medicine
Joseph Reich, MD	Medical Director Surgical Program and Chief of Surgery, Sault Area Hospital
Henrietta Van Hulle, RN, BN, MHSM, COHN, CRSP, CDMP	Vice President, Client Outreach, Public Services, Health and Safety Association
Janet Van Vlymen, MD, FRCPC	Anesthesiologist, Program Medical Director, Perioperative Services, Kingston Health Sciences Centre Associate Professor, Department of Anesthesiology and Pain Medicine, Queen's University
Harindra Wijesundera, MD, PhD	Vice President, Medical Devices and Clinical Interventions, Canadian Agency for Drugs and Technologies in Health Interventional Cardiologist, Sunnybrook Health Sciences Centre Senior Scientist, Sunnybrook Research Institute Associate Professor, Department of Medicine, University of Toronto
Dick Zoutman, MD, FRCPC, CCPE, C.Dir	Chief of Staff, Scarborough Health Network Professor, Faculty of Medicine, University of Toronto Professor, Faculty of Health Sciences, Queen's University Infectious Disease and Medical Microbiology Specialist

Appendix B: Glossary of Terms

Term	Definition
Community transmission	Community transmission is evidenced by the inability to relate confirmed cases through chains of transmission for a large number of cases or by increasing positive tests through sentinel samples (routine systematic testing of respiratory samples from established laboratories). ⁵
COVID-19 screening	Screening involves interviewing patients with a set list of questions based on the most recent guidelines. The Ministry of Health's screening tool can be used to identify people who have or who are suspected of having COVID-19 throughout the health and emergency response system. It is based on the latest COVID-19 case definitions and the coronavirus disease (COVID-19) situation reports published by the World Health Organization. ⁶
COVID-19 testing	Testing means that patients undergo a swab to collect a specimen for laboratory testing for SARS-CoV-2. ⁷ The Ministry of Health's testing guidance can be used before scheduled (non-urgent/ emergent) surgeries and procedures. ⁸
Personal protective equipment (PPE)	Personal protective equipment (PPE) refers to specialized clothing and equipment worn by health care workers for protection against hazards and to prevent injury or infection. In this document, PPE refers to N95 respirators, surgical/procedure masks, isolation gowns, gloves, and eye protection (goggles and face shields).