

A Measured Approach to Planning for Surgeries and Procedures During the COVID-19 Pandemic

Initial release: May 7, 2020

Date	Disclaimer
July 13, 2021	This document was released in May 2020 after the first wave of the COVID-19 pandemic in Ontario. Subsequent guidance documents and memos have been released by Ontario Health. This document will no longer be maintained but will remain online for reference and archival purposes.

Version History

Release Date	Source	Change(s)
May 7, 2020	COVID-19 Response: Surgical and Procedural Planning Committee	<ul style="list-style-type: none">• Initial release
June 15, 2020	COVID-19 Response: Surgical and Procedural Planning Committee	<ul style="list-style-type: none">• Included reference to Directive #2, which was amended on May 26, 2020• Modified Feasibility Assessment criteria C (PPE supply) and D (medication supply)• Modified Detailed List of Considerations items 2b (COVID-19 cases), 3a (acute care capacity), 5a (PPE supply), and 5c (medication supply)• Replaced Appendix D (Personal Protective Equipment) with link to Ontario Health's <i>Infection Prevention and Control (IPAC) for Scheduled Surgeries and Procedures during the COVID-19 Pandemic</i> document• Removed Appendix E (Examples of COVID-19 Infection Prevention and Control Protocols for Surgery)

Executive Summary

In April 2020, Ontario Health convened a group of experts to form the *COVID-19 Response: Surgical and Procedural Planning Committee*, chaired by Dr. Chris Simpson, to develop recommendations about how scheduled surgeries and procedures can be safely resumed to meet the needs of patients whose surgical and procedural care may have been delayed due to the COVID-19 pandemic. In this document, the Committee presents recommendations on how regions and hospitals can collaborate to do this in a measured way. Although the scope of these recommendations focuses on surgical and procedural activity, we acknowledge that there are other non-emergent activities that were ramped down and will also require a measured approach to resumption of services.

On March 15, 2020, hospitals began ramping down “elective surgeries and other non-emergent activities” in order to create capacity to care effectively for patients with COVID-19.¹ As the COVID-19 pandemic evolves, it is important to consider the impact of deferred care and develop a plan to resume services while maintaining COVID-19 preparedness. The objective of these recommendations is to ensure an ethical, measured, and responsive approach to the planning decisions for expanding and contracting surgical and procedural care in Ontario. Throughout the phases of the pandemic, the priority continues to be the health and well-being of both Ontario’s health care workers and patients.

To guide decision-making during the pandemic, regions, and hospitals should consider the interdependence of our health care system and how a change in one part of the care continuum may impact others. It is anticipated that some regions will be better positioned to resume scheduled surgical and procedural activity than others due to differences in capacity and/or rates of COVID-19 cases (e.g., outbreaks). Given this, it will be necessary to consider how geographical asymmetry affects access to surgeries or procedures for patients and how this asymmetry may be minimized through health system collaboration to ensure equitable access overall and for patient groups that face pre-existing health or social inequities.

As a first step, organizations should complete a feasibility assessment to assess the nine criteria identified in the **COVID-19 Surgical and Procedural Feasibility Assessment for Hospitals**. The key criteria include the COVID-19 disease burden in the community, COVID-19 cases in the organization, PPE supply, medication supply, inpatient and critical care capacity, health human resources, COVID-19 testing, care outside of the hospital, and waitlist management.

After completing the feasibility assessment, hospitals will proceed to collaborate with regional leadership to remove any identified barriers and mitigate risks and to gain support for proceeding with creating a surgical and procedural plan, using the **Detailed List of Considerations** as a guide. The key categories for consideration include regional status, COVID-19 cases, capacity, health human resources, supply chain, and ramp-down planning. A flow chart describing this process is provided in Figure 2.

This document also outlines the recommended **roles and responsibilities of Ontario Health, regions, and hospitals** in surgical and procedural planning during the COVID-19 pandemic. These include the involvement of regional or sub-regional COVID-19 Steering Committees, and the need to establish hospital Surgical and Procedural Oversight Committees, monitor hospital- and regional-level data, and collaborate in the design and implementation of plans to resume surgical and procedural activity. The

region or sub-region and hospital must jointly sign off on plans to resume scheduled surgeries and procedures. Key **implementation considerations** include ensuring transparent communication and ongoing follow-up with patients, establishing a fair process for surgical and procedural case prioritization, and leveraging opportunities to improve care delivery.

These recommendations reinforce that careful consideration of multiple factors and collaboration with internal, local, and regional partners is required for a measured approach to planning surgical and procedural activity during the COVID-19 pandemic.

1. Background

The COVID-19 pandemic has had an unprecedented effect on Ontario's health care system. The pandemic response has resulted in a prolonged strain on health system resources, with implications that will be felt over the coming months and years.

On March 15, 2020, Ontario's Ministry of Health released a memorandum¹ for hospitals to begin a measured "ramping down of elective surgery and other non-emergent activities" to preserve capacity to care effectively for patients with COVID-19. This was followed by the release of Directive #2 for Health Care Providers from the Chief Medical Officer of Health on March 19, 2020.² Hospitals responded in varying ways, with some significantly reducing volumes ("ramping down") to only "life or limb" surgical procedures accounting for only 10–20% of regular surgical activity, while others maintained 50% or more of regular surgical activity. This has led to 2,039 fewer adult cancer surgeries (–34%), 1,033 fewer adult vascular surgeries (–73%), 609 fewer cardiac surgeries (–44%), 62,614 fewer adult non-oncology surgeries (–93%), and 6,097 fewer pediatric surgeries (–93%) being performed between March 16 and April 26, 2020, as compared to the volumes in the same time period in 2019 (Ontario Health – CCO Wait Time Information System; CorHealth Ontario – Cardiac Registry). Similarly, diagnostic imaging volumes have been reduced over the same time period. There were 8,697 fewer CTs completed for cancer staging and diagnosis (–25%) and 61,896 fewer CTs for other indications (–52%); in addition, there were 2,051 fewer MRIs completed for cancer staging and diagnosis (–25%), 1,317 fewer MRIs for breast cancer screening (–89%), and 60,390 fewer MRIs for other indications (–64%) (Ontario Health – CCO Wait Time Information System).

On April 27, 2020, the government of Ontario released [A Framework for Reopening our Province](#), which outlines the principles the government will use to reopen businesses, services, and public spaces in gradual stages. For hospitals, this includes beginning to offer some non-urgent and scheduled surgeries and other health care services in stage 1 of the three-stage process.³ On May 26, 2020, Directive #2 for Health Care Providers was amended and reissued, along with operational requirements, in support of a gradual restart of deferred services.^{4,5}

Non-urgent and scheduled surgeries are often referred to as "elective". It is important to note that elective surgeries are those where "the acuity of the condition being treated surgically allows for the patient and their health care provider to elect the timing and scheduling of surgery without negative impact on the surgical outcome or disease process".⁶ While these elective surgeries and procedures may not be considered emergent or urgent, timely access to surgery and other procedures can prevent worsening of underlying conditions and improve quality of life. As the COVID-19 pandemic evolves, it is important to consider the impact of deferred access and clinical intervention on patient outcomes and to develop a plan for the resumption of services and rescheduling of postponed surgical and procedural care that continues to protect the health and well-being of patients, clients, and health care workers.

This document was developed by the *COVID-19 Response: Surgical and Procedural Planning Committee*, chaired by Dr. Chris Simpson. A full list of members is presented in [Appendix A](#). The Committee was tasked with developing a measured surgical and procedural increase plan that encompasses not only essential time-sensitive surgeries, but also scheduled surgeries, image-guided procedures, and related clinics (e.g., pre-operative). Specifically, the Committee was asked to provide recommendations on the following:

- A set of criteria that would determine when hospitals can reintroduce surgical and procedural work (and when they should ramp back down)
- The basis on which surgeries and procedures should be prioritized to resume

2. Objectives

The objective of these recommendations is to ensure an equitable, measured, and responsive approach to planning decisions for expanding and contracting surgical and procedural care, while continuing to protect our vulnerable populations and reserve capacity for any COVID-19 surge in Ontario during the phases of the COVID-19 pandemic. This document aligns with the guiding principles outlined in the [Framework for Reopening our Province](#): responsible, evidence-informed, resourced, monitored, responsive and effective, and clear.

This approach recognizes:

- The need for minimizing risk and maximizing benefits of the health system for all people in Ontario⁷
- The evolving nature of the pandemic and the need for a proportionate response
- The need to have a patient-centred approach that ensures patients and families are supported across the full continuum of care
- The need for equitable access for patients
- The existence of regional differences and the need to balance appropriate health human resources and scarce resources such as personal protective equipment (PPE) and medications
- The need to make data-informed decisions
- The need to weigh the therapeutic benefit of treatment against the potential risk for COVID-19 transmission to both patients and health care workers associated with the provision of surgical and procedural care
- The decision to expand surgical and procedural care impacts many different departments within hospitals

The approach recommended in this document aligns with the planning being done in other Canadian, American, and international jurisdictions for surgical and procedural care during the COVID-19 pandemic.⁶⁻¹¹

As we look at a measured approach for increasing surgical and procedural activity in hospitals, it is important to act as good stewards of available resources while maintaining COVID-19 preparedness. Stewardship requires that we protect and develop resources and be accountable for investing those resources in order to best ensure the well-being of our health care workers and patients. This overarching principle requires identifying and preserving priority programs or services that may not be provided elsewhere, monitoring health resource utilization and distribution to adjust scheduling, and collaborating with health system partners to provide optimal care to Ontarians. This should be done according to a fair process and should be guided by key ethical principles.

2.1 Guiding Ethical Principles

The following guiding principles were adapted from the ethical principles embedded in the Chief Medical Officer's Directive #2 for health care providers in making decisions regarding the reduction or elimination of non-essential and elective services.^{2,12}

The principles to guide the decision to increase surgical and procedural activities during the COVID-19 pandemic are as follows:

- **Proportionality:** Decisions to resume or increase surgical and procedural activities should be proportionate to the real or anticipated capacity to provide those services
- **Non-maleficence:** Decisions should strive to limit harm wherever possible. Activities that have higher implications for morbidity/mortality if delayed too long should be prioritized over those with fewer implications for morbidity/mortality if delayed too long. This requires considering the differential benefits and burdens to patients and patient populations as well as available alternatives to relieve pain and suffering
- **Equity:** Equity requires that all persons in the same categories (e.g., at different levels of urgency) be treated in the same way unless relevant differences exist, and that special attention is paid to actions that might further disadvantage the already disadvantaged or vulnerable. This requires considering time on wait lists and experiences with prior cancellations. Decision-makers should strive to consider the interests between the needs of COVID-19 patients and patients who need time-sensitive treatment for other diseases and conditions
- **Reciprocity:** Certain patients and patient populations will be particularly burdened as a result of our health system's limited capacity related to COVID-19. Consequently, our health system has a reciprocal obligation to ensure that those burdened by these decisions continue to have their health monitored, receive appropriate care, and can be reevaluated for emergent activities should they require them

2.2 Assumptions

The following assumptions have been made:

- The pandemic and its impacts in Ontario may last many months to years
- Emergent surgical and procedural care has been continuing during the pandemic
- Urgent surgical and procedural care has been continuing at reduced volumes during the pandemic
- Capacity has been appropriately created in hospitals during the acceleration phase of the pandemic, and this capacity should be considered for use when planning to increase surgical and procedural activity
- Changes to surgical and procedural activity (including increasing and decreasing activity) will be asymmetrical between organizations and regions based on their local context
- Some hospital staff may be redeployed to other units or settings, and this may impact planning to increase surgical and procedural activity
- The need for emergent or urgent surgery or procedures for patients with COVID-19 is determined on a case-by-case basis, weighing the risk of further delay of treatment against the risk of proceeding and the risk of virus transmission
- Plans for increasing surgical and procedural care includes existing backlog and cases that have been delayed since March 15, 2020

2.3 Pandemic Phases

The Centers for Disease Control and Prevention’s Updated Preparedness and Response Framework for Influenza Pandemics^{13,14} describes the progression of pandemic waves and related mitigation responses. It is expected that the impact on the health care system, and specifically on surgical and procedural resources, will be variable in the different phases of the pandemic. The following describes each pandemic phase and the associated mitigation measures and potential impact on surgical and procedural activity:

1. **Initiation:** close case-based monitoring and enhanced surveillance for COVID-19
2. **Acceleration:** consistently increasing rate of cases; community mitigation measures are in place; in hospitals, surgeries and procedures are ramped down—emergent surgeries and procedures continue, urgent surgeries and procedures are reduced, while resources for others are redirected to increase capacity in preparation for pandemic care. At the “apex” of the pandemic, inpatient and critical care resources are increasingly deployed and invested into pandemic care
3. **Deceleration:** consistently decreasing rate of cases; planning begins to loosen or lift community mitigation measures; during “recovery” phase, hospitals plan for surgeries and procedures to gradually increase
4. **Preparation:** low pandemic activity; outbreaks might continue to occur; planning continues to loosen community mitigation measures; enhanced surveillance to detect subsequent waves continues; hospitals work on restoring volumes and prepare for potential “second wave” of pandemic, remain agile, and prepare to ramp-down if needed

The recommendations in this document focus on the deceleration and preparation intervals of the pandemic phases. A heightened level of oversight and flexibility will be needed in our system for some time as we move through the full course of COVID-19 as there is uncertainty about the duration and volume of the pandemic waves. Figure 1 (below) demonstrates how the hospital-based mitigation measures related to surgical and procedural care may be mapped to the COVID-19 pandemic phases.

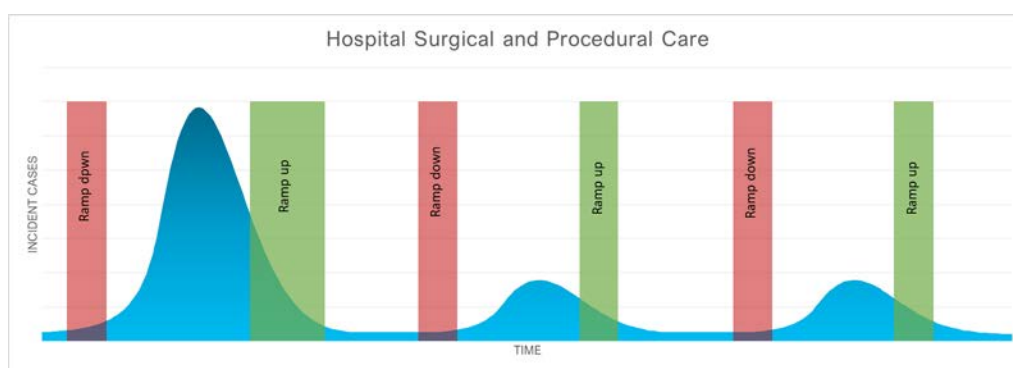


Figure 1: The phases of the COVID-19 pandemic hospital-based mitigation measures related to surgical and procedural care.

Source: Adapted from Tom Freidan, Resolve to Save Lives¹⁵, an initiative of Vital Strategies.

3. Recommendations

To further guide ethical decision-making during the pandemic, regions, and hospitals should consider the interdependence of our health care system and how a change in one part of the care continuum may impact others. Another important consideration is that the impact of the COVID-19 pandemic may be experienced differently across regions and across health care settings (e.g., hospitals, long-term care, rehabilitation, home and community care, primary care); as such, regions and hospitals may increase or decrease surgical and procedural care asymmetrically.

The following six recommendations for surgical and procedural planning ensure that these considerations have been addressed:

1. Use the existing regional or sub-regional COVID-19 Steering Committee to provide oversight in partnership with an organizational (hospital) Surgical and Procedural Oversight Committee
2. Conduct a feasibility assessment at the hospital level to ensure the following nine factors have been assessed and communicate results to regional leadership before increasing surgical or procedural activity in a hospital:
 - The community has a manageable level of disease burden or has exhibited a sustained decline in the rate of COVID-19 cases over the past 14 days
 - The organization has a stable rate of COVID-19 cases
 - The organization and region have a stable supply of PPE
 - The organization and region have a stable supply of medications
 - The organization and region have an adequate capacity of inpatient and ICU beds
 - The organization and region have adequate capacity of health human resources
 - The organization has a plan for addressing pre-operative COVID-19 diagnostic testing¹⁶ (where appropriate, in consultation with local IPAC)
 - The organization has confirmed that post-acute care outside the hospital is available and can be coordinated in a timely manner (e.g., home care, primary care, rehabilitation, clinic care)
 - The organization and region have a wait list management mechanism in place to support ethical prioritization
3. Attain joint sign-off from both the regional or sub-regional COVID-19 Steering Committee and hospital Surgical and Procedural Oversight Committee before an increase in surgical and procedural activity can be initiated
4. Review and re-conduct this feasibility assessment on a weekly basis to identify changes in the assessment and recognize when a change in direction is required
5. Follow a fair process for case prioritization that is grounded by a set of ethical principles as part of the implementation plan

6. Consider how to leverage opportunities to redesign care, such as making use of virtual care, implementing Choosing Wisely recommendations, and extending operating room hours

3.1 The Role and Responsibilities of Ontario Health, Regions, and Hospitals

Ontario Health, the regions and hospitals must carefully coordinate their efforts in planning to resume scheduled surgical and procedural activity in order to ensure the ongoing safety of our communities, patients and health care workers. Each group has an oversight structure, clear accountabilities, a mechanism to monitor key metrics, and a plan that includes specific ongoing activities. These requirements are described in the table below.

ROLE OF ONTARIO HEALTH	
<ul style="list-style-type: none"> • Provide recommendations that enable hospitals and regions to optimize surgical and procedural care in an equitable, measured, gradual, and responsive manner • Provide timely data to support regional and hospital planning • Work with the regions and the Ministry of Health as needed to remove barriers (e.g., facilitating patient and provider movement between hospitals, 7 day/week service, PPE allocation, etc.) 	
REGIONAL ROLE	
Oversight Structure	<ul style="list-style-type: none"> • The <i>COVID-19 Regional Steering Committee/Response Table</i> (may be regional or sub-regional depending on the geography) will: <ul style="list-style-type: none"> ○ Collaborate across hospitals in their region to arrive at a coordinated regional plan with commitment from leadership at each organization ○ Ensure the representation of key clinical and administrative perspectives on the committee across the continuum of care ○ Balance the need to be inclusive of many different health system perspectives and keeping the committee a manageable size for clear decision-making
Data/Monitoring	<ul style="list-style-type: none"> • Begin regional-level monitoring. Use available data and reports (Appendix B) to monitor: <ul style="list-style-type: none"> ○ COVID-19 pressures at the regional and sub-regional levels (e.g., geography is divided according to the Home and Community Care Support Services boundaries) ○ Surgical and procedural demand and activity (e.g. balancing wait lists and equitable access to care) ○ Resource availability (e.g., capacity in hospitals, primary care, home and community care, and rehabilitation; PPE and medical supplies)
Ongoing Activities	<ul style="list-style-type: none"> • On a weekly basis, collaborate with organizations that are planning to increase surgical and procedural activity <ul style="list-style-type: none"> ○ Ensure equity across the region through management of asymmetries between organizations ○ Foresee and mitigate any unintended adverse consequences that may arise across the region

	<ul style="list-style-type: none"> • Collaborate with organizations to mitigate the barriers that arise (e.g., address any barriers identified in the hospital’s weekly feasibility assessment) • Continually assess health care utilization impacts of provincial and regional COVID-19 community mitigation measures (e.g., tightening and loosening of social distancing) and communicate these impacts to hospitals • Collaborate with organizations on decisions to ramp-down surgical and procedural activities should conditions require¹²
HOSPITAL ROLE	
Oversight Structure	<ul style="list-style-type: none"> • Establish a hospital <i>COVID-19 Surgical and Procedural Oversight Committee</i>, with consideration of representation from across the care continuum • Ideally, the function and accountabilities lie within your existing leadership and incident management (or equivalent) structure (e.g., senior leadership team, Medical Advisory Committee, COVID-19 response committees) • Balance the need to be inclusive of many different health system perspectives and keeping the committee a manageable size for clear decision-making • This committee will oversee developing your surgical and procedural plan as a part of your organization’s overall COVID-19 response • Consider including a clinical and administrative dyad leadership and the following representatives on the committee: a surgeon; a clinical operations lead, an anesthesiologist; a radiologist; an executive sponsor; and representation from ethics, administrative leadership (e.g., operating room, procedural spaces), nursing leadership, relevant physician groups, medical laboratory, IPAC, and persons with lived experience (patients or caregivers) • Consider co-designing a plan with partners from your Ontario Health Team (where applicable) or other community and primary care partners
Accountability	<ul style="list-style-type: none"> • Confirm with the <i>COVID-19 Regional Steering Committee</i> (may be regional or sub-regional depending on the geography) when it is appropriate to increase surgical and procedural activity
Data/Monitoring	<ul style="list-style-type: none"> • Begin hospital-level monitoring. Use available data and reports (Appendix B) to monitor: <ul style="list-style-type: none"> ○ COVID-19 pressures in your hospital (including hospital testing capacity and turn-around time) ○ Hospital surgical and procedural demand and activity ○ Resource availability (e.g., hospital bed capacity, PPE and medication supply)
Ongoing Activities	<ul style="list-style-type: none"> • Complete a weekly feasibility assessment (Table 1) and communicate these results to your region • Using the list of considerations provided in Table 2, develop a plan for surgical and procedural activity <ul style="list-style-type: none"> ○ Outline a gradual, incremental approach to increasing surgeries and procedures that is agile enough to quickly ramp down, if needed, and includes contingency capacity for COVID-19 patients

	<ul style="list-style-type: none"> • Establish a fair process for case prioritization and consider the using a staged or stepwise approach in the resumption of services (Section 5 and Appendix C^{6-9,11,17-20}) • Reconcile guidance provided by other organizations with the guidance provided by Ontario Health • Develop a plan for rapid ramp-down of scheduled surgical and/or procedural activity, should future circumstances warrant¹² (e.g., increasing rate of COVID-19 cases, depleted supply of PPE and medications) • Collaborate with regional leads and other system partners (e.g., primary care, home and community care, rehabilitation) in the design and implementation of the plan • Continue to focus on ensuring transparent communication and safety of patients • Continue to focus on ensuring the health and safety of the health care workforce • Continue to steward resources responsibly, including PPE and medication supply • Consider infection prevention and control protocols on the management of COVID-19 in operating room and procedural spaces that factor in recommended PPE use and pre-operative testing (Appendix D) • Leverage opportunities to improve care delivery (e.g., expand virtual care options, consider extended operating room hours)
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4. COVID-19 Surgical and Procedural Feasibility Assessment for Hospitals

We recommend that all hospitals complete the feasibility assessment ([Table 1](#)) to ensure key assessment criteria have been considered. Once the feasibility assessment is complete, hospitals may move on to review the detailed list of considerations ([Table 2](#)) or follow the recommendations for next steps ([Table 3](#)). The results should be shared with regional leadership and inform any planning for increasing surgical and procedural activity. The relevant data should be monitored daily and the feasibility assessment completed on a weekly basis to confirm criteria are met or if discussion with your region is required. This is an iterative process of decision-making based on the changing environment. The flow chart in Figure 2 illustrates these steps.

Figure 2. A Measured Approach to Planning Surgeries and Procedures – Flow Chart

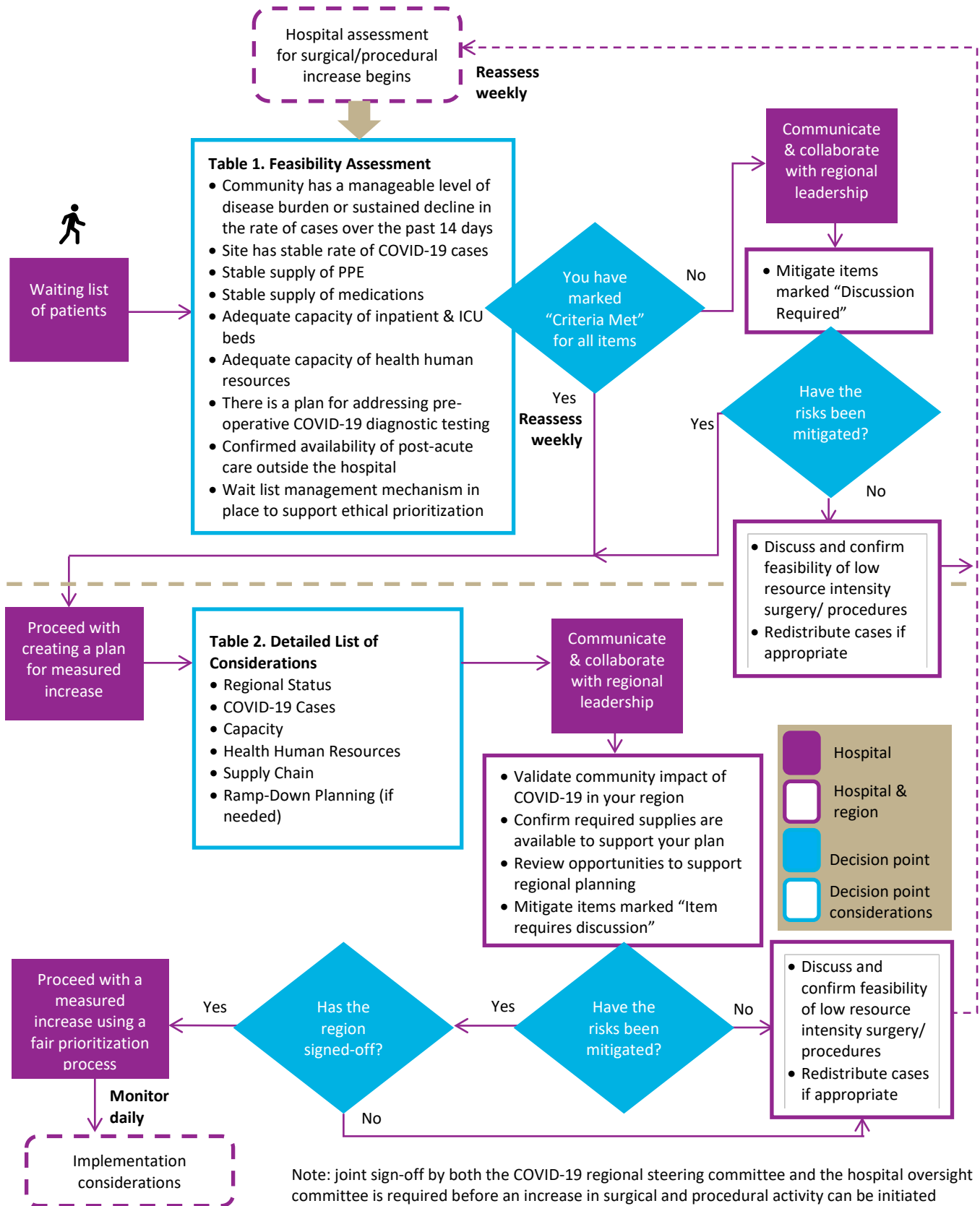


Table 1. Feasibility Assessment for Increasing Surgical and Procedural Activity in Hospitals During the COVID-19 Pandemic

Feasibility Assessment		
Complete the feasibility assessment to ensure key criteria are considered before moving forward with planning for an increase in surgical and procedural activity. Where barriers exist, they are discussed, and risks are mitigated before moving forward.		
	Criteria Met	Discussion Required
A. Has your community had a manageable level of disease burden or a sustained decline in the rate of COVID-19 cases over the past 14 days ^{8,9} ?		
B. Has your organization had a stable rate of COVID-19 cases? (<i>e.g., there are no new COVID-19 outbreaks at your organization</i>)		
C. Does your organization and region have a stable supply of PPE to allocate to additional surgeries and procedures as well as to respond to any future pandemic wave? (At least 15 days of stock on hand with regional or sub-regional backstop of 30 days and agreement for within-region PPE redistribution)		
D. Does your organization and region have a stable supply of medication to allocate to additional surgeries and procedures as well as to respond to any future pandemic wave? (At least 15 days of stock on hand)		
E. Does your organization and region have adequate capacity of inpatient and ICU beds to allocate to additional surgeries and procedures as well as to respond to any future pandemic wave?		
F. Does your organization and region have adequate capacity of human health resources to allocate to additional surgeries and procedures as well as to respond to any future pandemic wave?		
G. Does your organization have a plan for addressing pre-operative COVID-19 diagnostic testing ¹⁶ (where appropriate, in consultation with local IPAC)?		
H. Has your organization confirmed the availability of post-acute care outside the hospital that would be required to support patients after discharge? (<i>e.g., coordination of care in primary care, home and community care, and rehabilitation</i>)		
I. Is a surgical and procedural wait list management mechanism in place to support the ethical prioritization of cases at an organizational level and regional level?		
Your responses to the feasibility assessment will lead to one of the following actions:		
<p>a. If you marked “Criteria Met” for all the items in the feasibility assessment:</p> <ul style="list-style-type: none"> You are ready to move forward with planning for an increase in surgical and procedural activity Proceed to Table 2 to review and detailed list of considerations Continue to complete this feasibility assessment on a weekly basis 	<p>b. If you marked “Discussion Required” for any item in the feasibility assessment:</p> <ul style="list-style-type: none"> Where barriers exist, they are discussed, and risks are mitigated before moving forward with planning Discuss the feasibility of starting with low-resource intensity surgeries and/or procedures (e.g., short stay inpatient, outpatient, day surgery) Proceed to Table 3 to review the next steps in collaboration with your regional leadership 	

Table 2. Detailed List of Considerations to Guide Planning for Surgical and Procedural Activity in Hospitals During the COVID-19 Pandemic

Detailed List of Considerations
 If you have marked “Criteria Met” for all the items in the feasibility assessment, review this detailed list of considerations to inform the planning for increasing surgical and procedural activity. Where barriers exist, they are discussed, and risks are mitigated before moving forward with implementation. Reassess this list on a weekly basis for ongoing monitoring for continued activity and to inform the need for ramp-down.

	Item is not a barrier	Item requires discussion
1. Regional Status		
a. Are there active COVID-19 outbreaks at any long-term care facilities or other congregate care settings in your region?		
b. Have you redeployed staff to long-term care facilities or to other settings outside of your organization that may impact your ability to increase surgical and procedural activity?		
c. Are the outpatient and inpatient rehabilitation programs in your region ready to accept patients after surgery?		
d. Have you assessed the availability of home and community care in your region? (e.g., have the required capacity, staff, and PPE)		
e. Have you assessed the availability of primary care follow-up in your region? (e.g., have the required capacity, staff, and PPE, or can provide virtual care, where appropriate)		
2. COVID-19 Cases		
a. Capability and access to local COVID-19 diagnostic testing ¹⁶ (e.g., community testing, testing for health care workers, consideration of false negative test rates, supply of swabs and reagents, etc.)		
b. Do you have a protocol established for pre-operative screening for COVID-19 and physical distancing or self-isolation where feasible ¹⁶ ?		
c. Have you defined a specific criteria and/or threshold COVID-19 incidence rate to trigger ramping down? ⁸		
3. Capacity		
a. Does your site have at least 10% acute care capacity reserved for COVID-19 care? (i.e., 10% surge capacity of inpatient medical, surgical, and critical care beds available within 48 hours; this capacity does not include care in hallways and ensures IPAC measures can be maintained)		
b. Do you have a surge plan to support rapid increases in capacity?		
c. Does the physical space at your site allow physical distancing for both inpatient flow and outpatient activity?		
d. Does your ICU have capacity for both COVID-19 patients and the proposed increment in post-operative care?		
e. Is there availability in operating room and/or procedure suite spaces to support the proposed incremental surgical and procedural services? (e.g., spaces may be repurposed)		

	Item is not a barrier	Item requires discussion
f. Is there availability in pre-operative and follow-up clinic spaces available to support the proposed incremental surgical and procedural services? (e.g., spaces may be repurposed)		
g. Does your site have capacity to care for patients if repatriation is not possible?		
h. Is there availability of the diagnostic and supporting services required for surgical and procedural services? (e.g., diagnostic imaging, pathology, transfusion medicine laboratory or blood bank, sterile processing, clinical laboratory, housekeeping, engineering, etc.)		
i. Do you have appropriate facility cleaning policies in place for all areas along the continuum of care? (e.g., clinic, pre-operative spaces, operating room, workrooms, recovery room, ICUs, ventilators, scopes, etc.)		
4. Health Human Resources		
a. Do you have an adequate number of interprofessional team members available to accommodate a potential COVID-19 surge / next potential pandemic wave?		
b. Do you have an adequate number of interprofessional team members available to support the proposed increment in surgical activity? (e.g., staff redeployed to other areas of your organization)		
• Pre-operatively (e.g., clinic, diagnostic imaging)		
• Intra-operatively and intra-operatively (e.g., OR team)		
• Post-operatively (e.g., post-anesthesia care, inpatient unit staff)		
c. Do you have an adequate number of interprofessional team members available to support the proposed increment of procedural activity? (e.g., staff redeployed to other areas of your organization)		
• Pre-procedure		
• Intra-procedure		
• Post-procedure		
d. Do you have appropriate policies in place to support the health and well-being of health care workers during the COVID-19 pandemic? (e.g., stress and fatigue, childcare needs, contingency for newly diagnosed workers) ^{8,21}		
5. Supply Chain		
a. Do you have a stable supply of PPE* appropriate for the proposed increment of surgical and procedural care and for other areas of the organization? (At least 15 days of stock on hand with regional or sub-regional backstop of 30 days and agreement for within-region PPE redistribution) (for AGMP and non-AGMP: N95 respirators, surgical/procedure mask, gown, gloves, eye protection)		

* There must be no dependence on emergency escalation to source supplies while providing scheduled care.

	Item is not a barrier	Item requires discussion
b. Does your organization adhere to the recommended practices for PPE for COVID-19?		
c. Do you have adequate supply of medications required to support the proposed increment in surgical and/or procedural activity? (At least 15 days of stock on hand)		
d. Do you have adequate supply of ventilators required to support the proposed increment in surgical and/or procedural activity?		
e. Do you have adequate supply of surgical and procedural supplies? (e.g., stents, implants)		
6. Ramp-Down Planning¹² (if needed)		
a. Do you have a plan developed for rapid ramp-down of surgical and/or procedural activity, should future circumstances warrant? (e.g., increasing rate of COVID-19 rates, depleted supply of PPE and medications)		
b. Do you have a plan developed to review all the foregoing considerations on a regular basis to reconfirm that incremental surgical and/or procedural activity can safely continue?		
<ul style="list-style-type: none"> • After you have reviewed the detailed list of considerations, communicate and collaborate with your regional leadership to: <ul style="list-style-type: none"> ○ Validate the community impact of COVID-19 in your region ○ Review and seek support to mitigate the items that are flagged for discussion in your detailed list of considerations ○ Confirm that the supply of required PPE and medication is available to support your plan for increased surgical procedural activity ○ Obtain confirmation from regional leadership on your plan to increase surgical and procedural activity ○ Review and discuss opportunities to support regional planning and equitable access to care (e.g., could your site support patients from another hospital in your region?) • If there are no barriers to increasing surgical or procedural activity, continue with your planning; Section 5 provides ethical principles to guide fair priority setting process and Appendix C describes several case prioritization systems that should be considered as a part of your plans^{6-9,11,17-20} • If appropriate, review the feasibility of surgery and procedures that require lower resources (e.g., day surgery/procedures) • Monitor this list of considerations daily in order to assess the impact of COVID-19 in your community and in your hospital and ensure your plans are adjusted accordingly (i.e., ramped-down if needed) <ul style="list-style-type: none"> ○ Consider monitoring balancing metrics such as median time to inpatient bed and rate of alternate level of care (ALC) (see Appendix B) • As you move forward with an increase in surgical and procedural activity, keep your regional leadership updated on your assessments and ongoing progress 		

Table 3. Next Steps for Organizations that are Not Ready to Resume Surgical or Procedural Activity During the COVID-19 Pandemic

Next Steps	
If you marked “Discussion Required” for any item of the feasibility assessment, do not immediately proceed with planning for increasing surgical and procedural activity. Where barriers exist, they are discussed, and risks are mitigated before planning can move forward. Communicate and collaborate with your regional leadership to complete the following:	
Review the items that are marked “Discussion Required” and seek regional support to mitigate any immediate needs/barriers	
Discuss the feasibility of starting with low resource intensity surgeries and/or procedures types (e.g., short stay inpatient, outpatient, day surgery). Obtain confirmation from regional leadership on your plan	
If appropriate, seek regional support to redistribute your cases to other regional partners	
Reassess the items in the feasibility assessment on a weekly basis to ensure any planning is adjusted accordingly	

5. Process for Surgical and Procedural Case Prioritization

The prioritization of surgical and procedural cases during the pandemic requires consideration of multiple factors and adherence to a set of ethical principles to guide a fair process.

5.1 Principles to guide a fair priority-setting process²²

The principles to guide a fair priority-setting process for case prioritization are as follows:

- **Relevance:** Decisions should be based on reasons (i.e., evidence, principles, values) that fair-minded people can agree are relevant under the circumstances
 - Clearly indicate the aim and scope of your prioritization approach
 - Identify clear and explicit decision criteria
 - Ensure you collect data related to your decision criteria
 - Develop a rationale for decisions based on your criteria and data
 - Work with varied stakeholders throughout this process (collect multiple perspectives and experiences)
- **Transparency:** Decisions and their rationales should be made publicly accessible
 - Develop a communication plan that includes affected stakeholders and a rationale for your prioritization approach
- **Revision:** There should be opportunities to revisit and revise decisions and a mechanism to resolve disputes
 - Ensure you have a process in place to review and evaluate your prioritization approach at regular intervals
- **Engagement:** Efforts should be made to minimize power differences and to ensure effective stakeholder participation
 - Include affected stakeholders in consultation and decision-making
 - Support the prioritization approach with staff training and a change management strategy

- **Enforcement:** There should be voluntary or public regulation to ensure the other four conditions are met
 - Commit to your ethical prioritization approach (lead by example)
 - Monitor and evaluate your approach, seek opportunities for improvement and make course corrections as needed

Using these guiding principles, along with the information collected in the feasibility assessment and the detailed list of considerations for increasing surgical and procedural activity (included above in [Table 1](#) and [Table 2](#)), organizations and regions need to develop a fair process to guide case prioritization. This process considers patient, disease, and procedure factors, as well as the availability of resources during the COVID-19 pandemic. Collaboration across health care organizations and regions to prioritize cases can support the effort to maximize the most benefit for the greatest number of people when resources are limited. Monitor to ensure that the application of this list of criteria does not disproportionately disadvantage some patient populations relative to others based on disease or disability (see guiding ethical principles in [Section 2.1](#)).

5.2 Criteria for Case Prioritization

Plans should include a process for prioritizing surgical and procedural care that considers the following criteria:

- Patient factors (e.g., condition, co-morbidities)
- Disease factors (e.g., non-operative treatment options, risk of surgery delay)
- Procedure factors (e.g., inpatient vs. outpatient or day procedures, operating room time, length of stay, anticipated blood loss, intubation probability)
- Use of resources (e.g., PPE, medications, ICU and other postoperative care needs)
- COVID-19 exposure/virus transmission risk

To use hospital capacity without impacting readiness to respond to a surge in COVID-19 cases, a staged or stepwise approach allows hospitals to begin the resumption of services gradually²³, with services that are best suited to their particular context. A hospital that has one or two resource constraints but otherwise passes the feasibility assessment may choose to begin by offering services that require a minimal amount of a constrained resource. For example, a hospital may choose to begin with outpatient procedures, followed by day surgeries, followed by inpatient surgeries as resources become available. By taking this stepwise approach, hospitals can ensure there are appropriate measures in place to increase surgery and procedures safely and minimize risk to health care workers and patients.

[Appendix C](#) describes several examples of case prioritization and a staged resumption of services from the province of Quebec, the American College of Surgeons, the University of Chicago, the Australian Department of Health, the Asian Pacific Society for Digestive Endoscopy, and the Royal College of Surgeons of England.^{6-9,11,17-19}

6. Implementation

Under pandemic conditions, the health care environment is changing day to day. To guide decision-making, the province, regions, and hospitals should consider the interdependence of our health care system and how a change in one sector may impact others. The impact of the COVID-19 pandemic may be experienced differently across regions and across health care settings (e.g., hospitals, long-term care, rehabilitation, home and community care, and primary care).

Hospitals and regional leadership should work together to ensure there are no unintended community-wide consequences of decisions to resume some surgical and procedural activity. See roles described in [Section 3](#). The implementation of a plan should be guided by the guiding ethical principles provided in [Section 2](#).

Plans should consider ongoing communication with patients and address opportunities to improve care delivery.

6.1 Ensure ongoing communication and follow-up with patients

Even in the context of a pandemic, discussions with patients about their wishes and values still have a foundational role in any surgical and procedural activity. Continuous follow-up with patients and their families is essential. Every effort should be made to provide clear and transparent communication with patients and their families to ensure patients are supported across the full continuum of care.

Patients must be provided with relevant information regarding their health condition, not only while waiting for their surgery or procedure (when there are increased risks associated with delays in treatment) but also after the surgery, when additional barriers to post-acute support may be present. These discussions are vital to align care plans with patients' wishes and values. Pre-treatment discussions should cover topics such as the patient's wishes and alternative treatment options (where appropriate), and transparent discussions about any risks in the face of resource scarcity (e.g., timely access or lack of access due to ramp-down of scheduled surgery during the COVID-19 pandemic, any nosocomial risk of contracting COVID-19 in an acute care setting). Discussions should also incorporate vigilant monitoring of the patient's condition. Post-treatment discussions should address next steps, expectations, and what to do if a problem arises.

It will be up to each hospital and care provider to determine how they will communicate to patients during this pandemic. Access to information and transparency in how decisions are being made are paramount. Some patients may require more information than others, and all questions must be answered honestly. Patients' fear was identified as a key determinant to why critically ill patients avoided hospital-based care during the SARS outbreak²⁴. A combination of virtual discussions by phone or other means, complemented with written information stating key messages, is recommended.

6.2 Leverage opportunities to improve care delivery

The COVID-19 pandemic has resulted in significant changes in the health care system. During this time of change, it is imperative to leverage opportunities to improve care delivery. New ways of working can minimize the risk to patients and staff and optimize treatment and care during the COVID-19 pandemic.²⁵

The following three questions can help frame considerations for system transformation during the COVID-19 pandemic:

- **What do we want to keep doing?** This refers to changes in the health care system that occurred because of COVID-19 that are good and should be carried forward
- **What do we want to stop doing?** This refers to processes that are no longer relevant or needed in the context of low-level transmission of COVID-19
- **What we are leaving behind?** This refers to processes identified as past practice that will not be done again

The following are opportunities to improve care delivery:

- **Utilize services that reduce patient time spent in acute care settings.** For example:
 - *Virtual Care*²¹: Where appropriate, use virtual care for preoperative and postoperative follow-up visits, e.g.:
 - Ontario Telemedicine Network's [Important COVID-19 Information and Updates](#), which includes resources to support COVID-19 and the use of virtual care
 - Ontario Telemedicine Network's [Surgical Transitions Solutions](#), which can help to improve workflow efficiencies, support efficient resource use, and enhance communication within the circle of care and with the patient
 - *Care in the Community*: Where available, leverage services provided by primary care and home and community care services
 - *Outpatient Care*: Where feasible, perform more procedures on an outpatient basis
- **Ensure the appropriate use of tests, treatments, and procedures.** For example:
 - *Choosing Wisely Canada*: [Recommendations](#) and resources developed by professional societies representing different clinical specialties to identify tests and treatments that are not supported by evidence and/or could expose patients to harm ([Appendix E](#))²⁶
 - [Drop the Pre-Op](#), a toolkit for reducing unnecessary visits and investigations in preoperative clinics
 - [Becoming a Choosing Wisely Canada Hospital](#), a starter kit for hospitals that want to reduce unnecessary tests and treatments in hospital settings
 - *e-Consults*: provider to provider service to determine what tests are absolutely necessary²⁷
- **Advance digital innovation strategies.** For example:
 - Digitizing clerical processes
 - Managing backlog databases
- **Redesign care.** For example:
 - *Consider designating hospitals/units for surgical and procedural care (COVID-protected sites)*²¹
 - Consider designating COVID-protected hospital(s)/unit(s) where surgical and procedural care are resumed, the required surgical and procedural resources can be redirected to where they are needed, and health human resources are appropriately redeployed (where possible)
 - This opportunity requires careful collaboration among regions and hospitals
 - *Consider a centralized waitlist for surgeries and procedures, if feasible*

- *Consider extending operating room schedules*
 - Evening and weekend services may be an option at your organization
 - This will require attention to health human resources and other resources, as well as funding allocations, in order to be successfully implemented
 - Ensure collaboration with regional leadership when exploring this opportunity

7. Conclusion

The recommendations provided in this document outline an equitable, measured, and responsive approach to planning decisions for expanding and contracting surgical and procedural care, while continuing to protect our vulnerable populations and reserve capacity for any COVID-19 surge in Ontario during the phases of the COVID-19 pandemic. The recommendations emphasize careful consideration of multiple factors and collaboration with internal, local, and regional partners. Following this thoughtful, collaborative, and responsive approach will support the safe provision of surgical and procedural care for the people of Ontario during the coming phases of the COVID-19 pandemic.

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Appendices

Appendix A. Surgical and Procedural Planning Committee

Name	Title(s) and Institution(s)
Chris Simpson (Chair), BSc, MD, FRCPC, FACC, FHRS, FCCS, FCAHS	Vice-Dean (Clinical), School of Medicine, Queen's University
Connie Clerici, RN, BScN	Executive Chair, Closing the Gap Healthcare
David Musyj	President & CEO, Windsor Regional Hospital
David Pichora, MD, FRCSC	President & CEO, Kingston Health Sciences Centre
Derek McNally, RN, MM	Executive VP Clinical Services and Chief Nursing Executive, Niagara Health
Garth Matheson, MBA	Interim President & CEO, Ontario Health (Cancer Care Ontario)
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
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
Janice Skot, MHSc, CHE	President & CEO, Royal Victoria Regional Health Centre
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Sarah Downey	President & CEO, Michael Garron Hospital
Shaf Keshavjee, MD, MSc, FRCSC, FACS	Surgeon-in-Chief, Program Medical Director, Surgery, Anaesthesia, and Critical Care, University Health Network

	Director, Toronto Lung Transplant Program
Tim Jackson, BSc, MD, MPH, FRCSC, FACS	General Surgeon, University Health Network Provincial Surgical Lead, Ontario Health (Quality) President, Ontario Association of General Surgeons
Wendy Hansson, BSc, MHA, CHE	President & CEO, Sault Area Hospital

Appendix B. Data

Regional- and organizational-level monitoring of key factors is needed to support a data-driven, responsive approach to planning surgical and procedural care over the course of the COVID-19 pandemic. The following are metrics that should inform regional and organizational planning:

Metrics to gauge COVID-19 pressures:	Metrics to gauge surgery demand:	Metrics to gauge resource availability:
<ul style="list-style-type: none">• COVID-19 hospitalizations• Number of long-term care home outbreaks• In-hospital outbreaks• Hospital testing capacity and turn-around time	<ul style="list-style-type: none">• Current volumes• Surgical volume historical trend comparisons• Current waitlist queue• Current wait times	<ul style="list-style-type: none">• Ward bed & ICU occupancy• Acute ALC bed occupancy• Emergency Department 'Time to Inpatient Bed'• Regional PPE supply

COVID-19 Surgical and Procedural Provincial Dashboard

The dashboard is available through the COVID-19 Regional Steering Committees and provides information to the regions and hospitals to help support planning. The metrics contained in the dashboard are meant to complement the local information by providing a system-wide perspective. This dashboard includes timely feeds of existing system data sources on performance (wait times, volumes, capacity), including data from Ontario Health (Cancer Care Ontario), Critical Care Services Ontario, CorHealth, Access to Care Wait Time Information System, Trillium Gift of Life Network, etc.

Backlog Modeling Report for Cancer, Cardiac, Vascular, Transplant Surgeries, and Other Surgeries

This report provided by Access to Care will provide guidance to the system, regions, and hospitals regarding estimated size of the backlog of patients awaiting surgery and the increase in resources that would be required to clear the backlog post-COVID for cancer, cardiac and vascular, transplant surgeries, and other benign surgeries.

Appendix C. Prioritization of Surgical and Procedural Cases Examples

This appendix includes summaries and excerpts from several examples of case prioritization and a staged resumption of services. CADTH has released a briefing note that also includes examples of case prioritization options.²¹ Note that the triage or prioritization tools in circulation for surgical and procedural case prioritization during the COVID-19 pandemic may not have been validated robustly. Organizations should ensure face validity of these tools, consider whether these tools need to be modified based on their unique needs, and defer to sound clinical judgement.

A. [The Royal College of Surgeons of England: Recovery of surgical services during and after COVID-19 \(April 28, 2020\)](#)¹¹

These [recommendations](#) from the Royal College of Surgeons of England (RCS) for safe and efficient care as surgery resumes are categorized under nine themes:

- I. Key considerations before resuming elective services
- II. Developing cohesive leadership and process of frequent communication
- III. Assessing surgical workload and patient population
 - Patient prioritization: there should be clear prioritisation protocols that reflect local and national needs, alongside availability of local resources
 - See [RCS COVID-19 Good Practice Guide, 2020](#) for guidelines
- IV. Ensuring adequate hospital capacity and facilities
- V. Enhancing workforce capacity
- VI. Reconfiguring services
- VII. Supporting the surgical workforce
- VIII. Patient communication
- IX. Supporting training

B. [Australian Department of Health: Australian Health Protection Principal Committee \(AHPPC\) statement on restoration of elective surgery \(April 23, 2020\)](#)¹⁹

The Australian government released a [news release](#) announcing the easing of elective surgery restrictions beginning April 27, 2020. The objective is “to be able to increase the availability of elective surgery in a safe and equitable way on a nationally consistent basis”. This first stage of reinstating elective surgeries will require health administrators to monitor supplies of PPE, ICU and bed capacity. The principles around reintroduction of hospital activity includes:

- Equity of access for all patients determined by clinical decision making and safety
- Preservation and appropriate use of PPE
- Clear timeframes to monitor and review the situation
- Restoration of elective surgery will be consistently applied in both public and private settings
- Decisions on elective surgery are subject to local hospital capacity, jurisdiction capacity, transport availability and any other relevant quarantine arrangements in place
- Restrictions may be reintroduced depending on whole of system demand constraints related to COVID-19 and will be based on outcomes of review and reassessment

mechanisms. Restrictions may also be reintroduced at a hospital or regional level in the event of an outbreak

- National COVID-19 testing guidelines will be adhered to, in line with the national disease surveillance strategy

The selection of patients to for the first tranche of elective activity will be based on clinical decisions focused on:

- Procedures representing low risk, high value care as determined by specialist societies
- Selection of patients who are at low risk of post-operative deterioration
- Children whose procedures have exceeded clinical wait times
- Assisted reproduction (IVF)
- Endoscopic procedures
- Cancer screening programs
- Critical dental procedures

C. [Ministère de la Santé et Services Sociaux du Québec: Prioritization system for access to surgery in a pandemic situation \(April 20, 2020\)](#)⁷

This document outlines a consistent and universally applicable surgical prioritization system that aims to provide an equitable allocation of resources and ensure that patients in similar circumstances receive similar care during a pandemic. This prioritization system applies to all patients assessed for surgery, regardless of the etiology of their disease and regardless of their exposure or risk related to COVID-19, and follows a set of ethical guiding principles.

The surgical prioritization system follows the Stahel (2020)²⁰ surgical classification system and is implemented in five steps:

- I. Operating room production capacity
 - Determine the maximum amount of resources that can be put to work in surgical and procedural care
- II. Pre-sorting
 - Surgeons collaborate to prioritize patients who should have their care during the pandemic (referring those whose can wait to appropriate non-surgical care while reassessing their care needs regularly)
- III. Triage
 - Priority list: completed by specialty groups
 - Second priority: combined all specialty lists
 - When resources are most limited and to maximize the most benefits for the greatest number:
 - Prioritize cases requiring least amount of surgical time and resources first; this loosens as more resources become available
 - Prioritize patients most likely to recover quickly (low ASA Physical Status Classification)
- IV. Build operating schedule
 - Combining capacity/resources with list of patients from all specialists, determine which room will be open and which patients will be operated on

- Suggested governance includes a Surgical Oversight Committee with support from an ethicist or clinical ethics committee
- V. Return to normal
 - Continue to apply prioritization, including low priority cases in the schedule, until wait list cleared

D. [American College of Surgeons: Local Resumption of Elective Surgery Guidance \(April 17, 2020\)](#)⁸

The American College of Surgeons released guidance for local resumption of elective surgery in April 2020. The document offers a set of principles and issues to help local facilities plan for resumption of elective surgical care. The authors suggest facilities complete a checklist as a guide to ensure key issues are considered. The following categories are included:

- I. COVID-19 Awareness
- II. Preparedness
- III. Patient Issues
- IV. Delivery of Safe and High-Quality Care

Within these categories, there are 10 distinct issues to be addressed locally before elective surgery may be safely reinstated. Within the Patient Issues category, one of the key issues to address is surgery prioritization protocol/planning.

E. [Joint Statement from The American College of Surgeons, American Society of Anesthesiologists, Association of periOperative Registered Nurses, and American Hospital Association: Roadmap for Resuming Elective Surgery after COVID-19 Pandemic \(April 17, 2020\)](#)⁹

This joint statement was released to outline the list of principles and considerations to guide physicians, nurses, and local facilities in their resumption of care in operation rooms and all procedural areas. The categories of principles include:

- Timing of reopening of elective surgery
- COVID-19 testing within a facility
- PPE
- Case prioritization and scheduling
- Post-COVID-19 issues for the five phases of surgical care
- Collection and management of data
- COVID-related safety and risk mitigation surrounding a second wave
- Additional COVID-19 related issues

F. [American College of Surgeons \(ACS\): Guidelines for Triage and Management of Elective Cancer Surgery Cases during the Acute and Recovery Phases of Coronavirus Disease 2019 \(COVID-19\) Pandemic \(May 7, 2020\)](#)¹⁸

These guidelines were developed by the leaders within the ACS Cancer Programs in order to provide a framework for how providers can consider the many challenging aspects of cancer patients' needs during the pandemic, including during the acute phase (a time defined by governmental bans on "elective" surgery) and during the recovery phase (when bans will be lifted and backlogs of patients will need urgent attention). This document provides guidance on prioritization strategies. The guidelines include cancer care triage and management throughout

the phases of the pandemic for the following types conditions: breast cancer, colorectal cancer, thoracic malignancy, pancreas and periampullary cancer, soft tissue sarcoma, and melanoma.

G. [Prashand et al., 2020: Medically-Necessary, Time-Sensitive Procedures: A Scoring System to Ethically and Efficiently Manage Resource Scarcity and Provider Risk During the COVID-19 Pandemic \(August, 2020\)](#)⁶

This publication from the Journal of the American College of Surgeons recognizes that under pandemic conditions and with scarce health care resources, there is a need to prioritize cases to minimize risk and maximize benefits for communities.

This article describes a scoring system that may be used to support the triage of surgical cases during the pandemic. The scoring system incorporates factors associated with perioperative patient outcomes, risk of COVID-19 transmission to health care providers, and hospital resource utilization. A higher cumulative score is associated with poorer perioperative patient outcomes, increased risk of virus transmission to the health care team, and/or increased hospital resource utilization.

The scoring system considers the following factors (outlined in Tables 1 through 3 of the article):

- Procedure factors
 - Operating room time
 - Estimated length of stay
 - Post-op ICU need
 - Anticipated blood loss
 - Surgical team size
 - Intubation probability
 - Surgical site
- Disease factors
 - Non-operative treatment option effectiveness
 - Non-operative treatment option resource/exposure risk
 - Impact of 2-week and 6-week delay in disease outcome
 - Impact of 2-week and 6-week delay in surgical difficulty
- Patient factors associated with greater severity of COVID-19 illness and worse outcomes
 - Age
 - Lung disease (asthma, COPD, cystic fibrosis)
 - Obstructive sleep apnea
 - Cardiovascular disease (hypertension, CHF, CAD)
 - Diabetes
 - Immunocompromised (hematologic malignancy, stem cell transplant, solid organ transplant, active/recent cytotoxic chemotherapy, anti-TNF α or other immunosuppressants, >20mg prednisone equivalent/day, congenital immunodeficiency, hypogammaglobulinemia on IVIG, HIV with CD4)
 - Influenza-like illness symptoms (fever, cough, sore throat, body aches, diarrhea)
 - Exposure to known COVID-19 positive person in the last 14 days

H. [Chiu et al., 2020: Practice of Endoscopy During COVID-19 Pandemic: Position Statements of the Asian Pacific Society for Digestive Endoscopy \(APSDE-COVID Statements\) \(April 2, 2020\)](#)¹⁷

These position statements from the Asian Pacific Society for Digestive Endoscopy address considerations for endoscopy practice during the COVID-19 pandemic. The authors included a recommendation that endoscopy centres follow a stepwise resumption of elective endoscopy services according to the table below.

Provision of endoscopy service during COVID-19 pandemic

COVID-19 in the community	PPE supply	Endoscopy service
Exponential increase in new cases of COVID-19	Critical (reserve <7 days)	<ul style="list-style-type: none"> • Urgent endoscopy only • Semi-urgent endoscopy – withhold • Elective endoscopy – withhold
Rapid increase in new cases of COVID-19	Very low (reserve <4 weeks)	<ul style="list-style-type: none"> • Urgent endoscopy only • Semi-urgent endoscopy – to be individualised • Elective endoscopy – withhold
Down trend in new cases of COVID-19	Suboptimal (reserve 4-8 weeks)	<ul style="list-style-type: none"> • Urgent endoscopy – full capacity • Semi-urgent endoscopy – full capacity • Elective endoscopy – resumed with 50% capacity
No new cases of COVID-19 diagnosed for at least 2 weeks	Normal (12 weeks reserve)	<ul style="list-style-type: none"> • Urgent endoscopy – full capacity • Semi-urgent endoscopy – full capacity • Elective endoscopy – full capacity

Appendix D. Infection Prevention and Control for Scheduled Surgeries and Procedures During the COVID-19 Pandemic

Ontario Health has released recommendations for [Infection Prevention and Control \(IPAC\) for Scheduled Surgeries and Procedures during the COVID-19 Pandemic](#). The document addresses IPAC measures, including personal protective equipment (PPE). The recommendations apply to all hospital-based scheduled surgeries and procedures, including the processes before, during, and after a scheduled surgery or procedure is performed amid the COVID-19 pandemic, with the goal of ensuring the safety and protection of health care workers and patients.

The recommendations address the following topics:

- COVID-19 screening and self-isolation prior to a scheduled surgery or procedure
- Pre-surgical and pre-procedural COVID-19 testing
- IPAC considerations, including PPE, for scheduled surgeries and procedures in hospital

Appendix E. Choosing Wisely Canada

Choosing Wisely Canada provides [recommendations](#) and resources that are developed by professional societies representing different clinical specialties.²⁶ The recommendations identify tests and treatments that are not supported by evidence and/or could expose patients to harm. The recommendations provided are intended to be used to support conversations between clinicians and patients to determine an appropriate care plan for each patient individually.

Listed here are relevant toolkits and specialties that have recommendations related to surgical and/or procedural care.

- [Drop the Pre-Op](#)
- [Becoming a Choosing Wisely Canada Hospital](#)
- [Anesthesiology](#)
- [Cardiology](#)
- [Gastroenterology](#)
- [General Surgery](#)
- [Nuclear Medicine](#)
- [Oncology](#)
- [Orthopaedics](#)
- [Paediatric Surgery](#)
- [Paediatric Neurosurgery](#)
- [Radiology](#)
- [Spine](#)
- [Transfusion Medicine](#)
- [Vascular Surgery](#)