COVID-19: Framework for the Resumption of Endoscopic Activities from the Canadian Association of Gastroenterology

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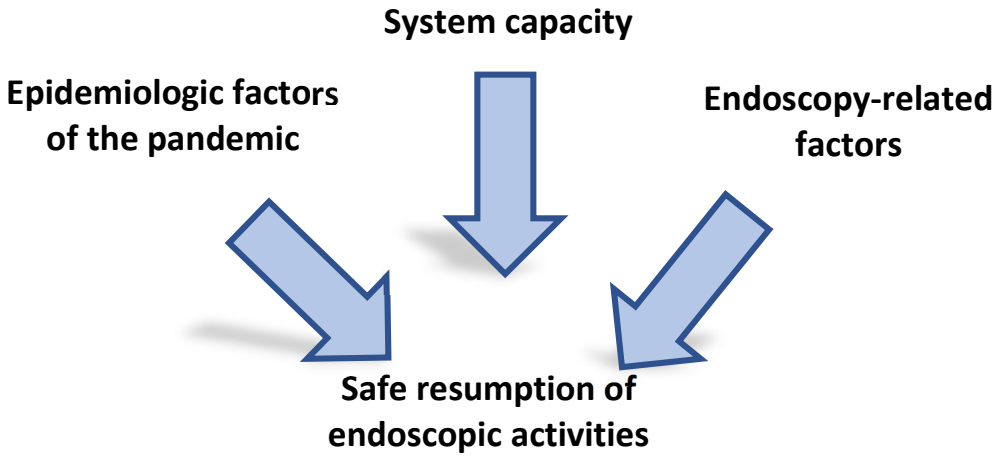
As the coronavirus disease 2019 (COVID-19) pandemic endures, the ensuing volume of postponed non-urgent endoscopic procedures is creating a new challenge. The accumulation of patients on waiting lists risks causing new problems related to delays in diagnosis or treatment from reduced endoscopic activities. We must balance our eagerness to resume endoscopic activities with the knowledge that increased patient contact during the receding phase of the pandemic could pose a risk of resurgence of the disease over the next few months. The threat of second waves requires us to proceed with extreme care.

This framework aims to provide guidance to endoscopists and endoscopy unit administrators resuming elective endoscopic activity during the post-peak phase of the COVID-19 pandemic. The World Health Organization (WHO) suggests the application of physical distancing measures and movement restrictions for at least two to three months, based on the experience of countries first affected by COVID-19.[1] Decisions on when and how to resume non-urgent endoscopic activities must be based on multiple factors, some internal and some external to the endoscopy unit's responsibilities. It is

proposed that **each incremental phase last a minimum of two weeks** to allow sufficient time to measure the effect of change and reassess risk. Planning for increases in endoscopic volumes should be a concerted effort with realistic objectives. The following is a non-exhaustive list of factors that need to be taken into account in order to appropriately re-introduce elective endoscopic activity:



Epidemiologic factors of the pandemic	System capacity	Endoscopy-related factors
➢ Current state and phases of the pandemic ➢ Changes in contagiosity and risk of transmission from endoscopic procedures ➢ Effectiveness of containment and protective measures ➢ Diagnostic performance of COVID-19 testing according to the prevalence of the infection ➢ Identification of vulnerable patients ➢ Effectiveness and durability of acquired immunity to the virus	➢ Space to implement physical distancing measures ➢ Availability of human resources ➢ On call staff, surgical services and hospital/ intensive care unit (ICU) bed availability for management of potential complications ➢ Timely access to ancillary services, such as surgery and chemotherapy ➢ Availability of personal protective equipment (PPE) ➢ Access to rapid COVID-19 testing results (if shown to provide screening value) ➢ Availability of equipment and medications (i.e.: sedation, reversal, intravenous fluids)	➢ Prioritization of endoscopic procedures ➢ Availability of trained personnel ➢ Volume of postponed procedures ➢ Scheduling reductions due to slower room turnover required for infection control measures ➢ Altered patient flow to enhance physical distancing ➢ Altered staff flow to minimize potential exposure ➢ Altered patient attitudes and motivations regarding presenting to endoscopy unit during a pandemic

Examples of scenarios:

a) In an endoscopy unit with limited availability of PPE but access to timely COVID-19 testing, systematically testing each patient before endoscopy will identify lower-risk patients, mitigate contact risks, help select appropriate PPE and increase the number of non-urgent endoscopies.
b) In a unit well supplied with PPE but with limited access to COVID-19 testing, a systematic pre-endoscopic screening process and structured patient trajectory to adhere to physical distancing guidelines will facilitate the re-introduction of some non-urgent procedures.
c) In a unit with limited availability of PPE and limited access to COVID-19 testing, the unit will need to restrict endoscopic access to only the highest priority indications (Priority 1 and 2) and a few selected Priority 3 cases until more PPE becomes available. A systematic pre-endoscopic screening process will be required to identify patients who should undergo testing for COVID-19 prior to endoscopy.

Based on a literature review of available recommendations from major endoscopy-oriented scientific organizations and available evidence related to outcomes associated with delaying endoscopic procedures,[2-11] the Canadian Association of Gastroenterology (CAG) COVID working group suggests a hierarchical set of priorities for various endoscopic procedures.

Priority categories:

1. Emergent / life threatening conditions for which endoscopy **must always be performed**.
2. Conditions which may cause early negative impact on patients' health, quality of life or functional status. These endoscopic procedures will alter management and/or outcome and **should be performed**.
3. Indications for which a delay of several weeks will not likely alter the quality of life or prognosis of the patient. Those procedures **could be performed** when the unit is up to date and can schedule activities beyond ongoing Priority 1 and 2 procedures.
4. Indications with no impact on prognosis or quality of life over many months/years. **Should be deferred** until the end of the pandemic or until the local epidemiological factors allow high through-put comparable to pre-pandemic activities.

Table 1. Prioritization of endoscopic procedures according to the indication

Priority 1 – perform always	
Upper	Emergent upper GI bleeding (Blatchford score over 1)[12]
	Foreign body or severe/progressive dysphagia
	Treatment of perforation/leak/fistula/abscess
Lower	Acute obstruction needing decompression
ERCP	Obstructive jaundice or symptomatic CBD stone
	Ascending cholangitis
Priority 2 – should perform	
Upper	Non-emergent upper GI bleeding (Blatchford score over 1)
	High likelihood of upper GI cancer based on imaging, physical examination or symptoms*
	Variceal ligation after acute bleeding
	PEG/PEJ or NG/NJ tube placement
	Endoscopic resection of histologically proven neoplasm (high grade dysplasia)
Lower	Acute lower GI bleeding
	Investigation of active colitis/new diagnosis or flare of IBD
	High likelihood of colon cancer based on imaging, physical examination or symptoms*
EUS	EUS-guided drainage of symptomatic or infected pancreatic fluid collections / necrosectomy
	Staging or biopsy for suspected or confirmed cancer*
	Suspected CBD stone(s), if MRCP not available
Priority 3 – could perform	
Upper	Endoscopic resection of duodenal polyp/ampullectomy
	Mild/stable dysphagia
	Enteroscopy for obscure bleeding
Lower	Endoscopic resection of large or complex polyp
	Positive FIT
	Repeat procedures for prior inadequate preparation
	Iron deficiency anemia
	Rectal bleeding
EUS	EUS for submucosal lesion
ERCP	Pancreatico-biliary stent removal/revision/replacement

Priority 4 – defer	
Upper	Assessment of reflux esophagitis/PUD healing
	Investigation for non-alarm symptoms
	Screening and surveillance gastroscopy
Lower	Investigation for non-alarm symptoms
	Screening and surveillance
EUS	Investigation for non-alarm symptoms
ERCP	Asymptomatic biliary stricture/gallstones (normal liver enzymes)

Every decision to perform endoscopy should take into consideration:

1. **risks to the patient and endoscopy staff;**
2. **the potential to change management and/or to alter the prognosis of the patient;**
3. **health system capacity.**

Severity of symptoms/laboratory or imaging findings or time spent on the waiting list may change the priority of a given patient that may need to be reassessed on a case-by-case basis. All procedures that does not fit the definition of Priority 1 to 3 should be considered Priority 4. A list of patients and their conditions should be updated regularly to reassess the priority of procedures.

***For oncology cases, priority should be based on access to subsequent treatments and expected time to progression.**

ERCP, endoscopic retrograde cholangiopancreatography; GI, gastrointestinal; CBD; common bile duct; PEG, percutaneous endoscopic gastrostomy; PEJ, percutaneous endoscopic jejunostomy; NG, nasogastric; NJ, nasojejunal; IBD, inflammatory bowel disease; EUS, endoscopic ultrasound; MRCP, magnetic resonance cholangiopancreatography; FIT, fecal immunochemical test; PUD, peptic ulcer disease.

In conclusion, it is important to acknowledge that resumption of endoscopy services is not likely to be a linear process. Additional phases of re-opening and re-closing of endoscopy units for non-urgent procedures may be necessary based on public health recommendations or on local resources. Thus, a stepwise, flexible and adaptative approach is needed. The CAG recognizes that endoscopy is performed within a wide range of contexts, with important differences that can have implications for operational logistics. It is hoped that this framework provides a useful starting point for endoscopy units planning to resume elective endoscopic activity during the post-peak phase(s) of the COVID-19 pandemic.

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