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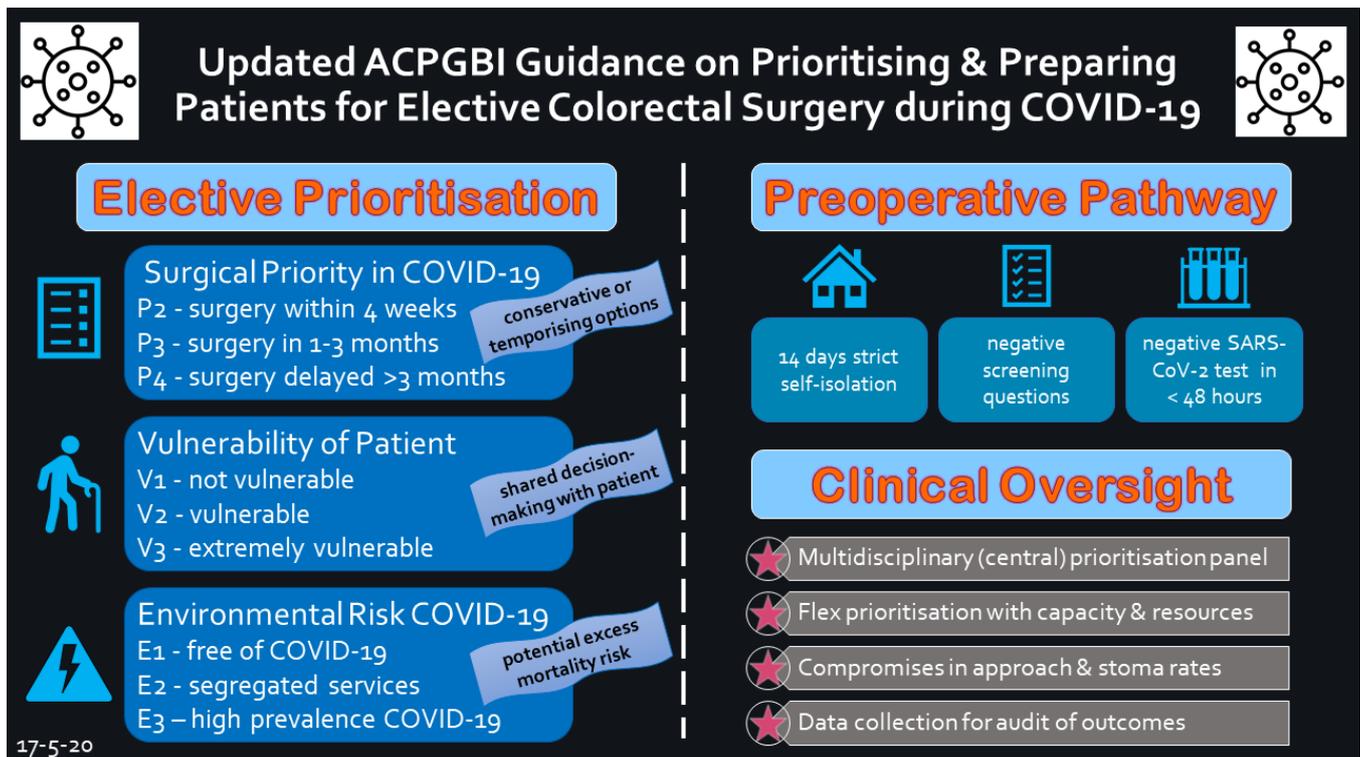
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Resumption of Elective Colorectal Surgery during COVID-19 Updated ACPGBI considerations on surgical prioritisation, patient vulnerability and environmental risk assessment

First published 28 April 2020; updated 17 May 2020

Summary of Key Changes since Last Guidance published 28-4-2020

- Provision and protection of “cold” sites to deliver elective surgery safely is an absolute priority.
- Surgery for advanced pelvic cancer and multivisceral resection is now included in priority category 3 provided resources are available.
- Preparation of elective patients with 14-days self-isolation, screening questions and swab testing.
- CT chest is no longer recommended as a screening test for COVID-19 prior to elective surgery.
- Anastomosis, where appropriate, does not need to be avoided as there are now sufficient resources for salvage in the event of anastomotic leak.
- Laparoscopic approaches may be used in screened and self-isolated elective patients provided safe practice techniques are observed.
- PPE should still be worn for laparoscopic and open procedures.
- Dual consultant operating is no longer recommended for all cases but should still be used when in the patient's benefit.
- Operative training, especially of senior trainees, should recommence where feasible.



Updated Information for Prioritising & Preparing Patients for Elective Colorectal Surgery in COVID-19

The surgical priorities during the surge and plateau phases of the COVID-19 pandemic have rightly focussed on maintaining emergency general surgical services and supporting national initiatives to create sufficient resource and facilities to care for patients with COVID-19 requiring hospitalisation.

Rapid access colorectal cancer referral pathways have mostly transitioned during the COVID-19 surge to triage systems based on primary care or remote FIT testing, virtual clinical assessment, and investigation through CT of the abdomen and pelvis. A small number of COVID-free sites have been able to offer limited access to CT colonography.

<https://www.acpgbi.org.uk/content/uploads/2020/04/Joint-ACPGBI-BSG-BSGAR-considerations-on-colorectal-cancer-pathway-in-COVID-19-FINAL-9-4-20.pdf>

There are significant numbers of patients whose elective surgery for colorectal cancer, inflammatory bowel disease (IBD) and other colorectal conditions have been deferred. While some patients may reasonably be deferred for a time, it is imperative that there is an “exit” strategy for re-introduction of surgical services for elective patients to meet the highest priority needs.

<https://www.acpgbi.org.uk/content/uploads/2020/03/ACPGBI-statement-on-CRC-treatment-during-COVID-19-FINAL.pdf>

<https://www.acpgbi.org.uk/content/uploads/2020/04/ACPGBI-Guidance-on-Management-of-IBD-Patients-requiring-Surgical-Intervention-during-COVID-19-v15-4-20.pdf>

Planning to deal with backlogs of deferred investigations and surgical procedures is an essential component of ongoing management of the COVID-19 pandemic to avoid a second wave of potentially preventable cancer deaths or worsening prognosis for patients with all types of colorectal disease. Initial

modelling on the potential burden of delayed cancer surgery, including colonic and rectal cancer, may be found here: <https://www.medrxiv.org/content/10.1101/2020.04.21.20073833v1.full.pdf>.

Considerations

Recommencement of some level of elective activity will inevitably be predicated on a balance of:

- availability of local and regional resources that may fluctuate with time
- surgical prioritisation of patients and assessment of potential for harm if delayed
- vulnerability assessment of individual patients to potentially adverse outcome in the event of acquiring COVID-19 as a nosocomial infection
- prevalence of COVID-19 infection in both patients and staff within the healthcare environment where surgery will be undertaken.

Preliminary data from the CovidSurg prospective observational cohort study (personal communication Aneel Bhangu) suggest that elective cancer patients who develop COVID-19 have an increased mortality due to pulmonary complications. It is acknowledged however that new data is constantly emerging. The risk of acquiring postoperative COVID-19 appears to be strongly linked to the level of COVID-19 infection within a healthcare environment. Sites with low prevalence of COVID-19 during the pandemic have postoperative elective cancer surgery mortality rates comparable to those prior to the pandemic. This factor presents a major public health challenge in providing “COVID-19 free” sites for safe elective surgery while the population prevalence is high. Current terms for low risk (as there is never “no” risk during a pandemic) COVID-19 sites are “cold”, “clean” and “green”.

Emerging evidence on COVID-19 prevalence and outcomes, pressure on resources at local and regional level, updated national guidance, testing facilities for patients and staff, sensitivity of available tests and availability of separate or segregated sites will all need to be taken into account when interpreting these recommendations. Our purpose here is to highlight key considerations within a framework for colorectal surgeons to re-establish local and regional elective colorectal surgery during the COVID-19 pandemic and its aftermath. Deciding when to reintroduce elective services and at what level of activity is based on a range of local criteria including demonstrable fall in COVID-19 cases and confirmed availability of personal protective equipment (PPE), clinical diagnostics and support services, theatre capacity, perioperative care teams, access to critical care and COVID-19 testing for patients and staff.

<https://www.rcseng.ac.uk/-/media/files/rcs/coronavirus/recovery-toolkit-tool-1--checklist-for-restarting-elective-surgery.pdf>

Prioritisation of Colorectal Surgery during COVID-19

Intercollegiate advice on relative prioritisation across all surgical specialties has been published by the British and Irish Surgical Royal Colleges:

<https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/C0221-specialty-guide-surgical-prioritisation-v1.pdf>

This guidance covers the elective surgical priority levels for colorectal surgery:

- P2 for surgery that should take place within 4 weeks
- P3 for surgery that should take place within 3 months
- P4 for surgery that can be delayed for more than 3 months.

Delay in treatment may still result in adverse outcomes. Good administrative tracking will be essential to ensure patients do not get “lost” in the system. Regular scheduled remote updates through clinical nurse specialists will help mitigate against harm from disease progression or clinical deterioration.

Some procedures previously listed in Priority Group 4 are now listed in Priority level 3 as many patients have now been deferred for one or two months already. These include pelvic exenteration and multivisceral colorectal cancer resections, that require significant preoperative planning due to the significant requirements for critical care, blood transfusion, multiple clinical teams, long operating times, and length of hospital stay. Alternative treatment options such as pelvic radiotherapy or systemic anticancer treatments should still be considered where possible for these patient groups.

Salvage surgery for recurrent anal cancer has been assigned to Priority 3 as there is no other cancer treatment available for these patients and the tumour biology tends to be more aggressive than locally advanced primary or recurrent rectal cancer.

There are many cases where patients with benign disease should also be offered surgery during recovery and clinical judgement should be used, with surgeons acting as advocates for their patients in prioritisation.

Surgical Priority Category during COVID-19	Colorectal Procedures
Priority 2	Strictureing or fistulating luminal Crohn’s disease not responsive to endoscopic or medical treatment MDT directed resection or diversion for highly symptomatic cancer
Priority 3 *see notes in text above	MDT directed resection of colon cancer MDT directed resection of rectal cancer MDT directed resection of colorectal cancer liver metastases MDT directed resection of neuroendocrine tumour Salvage surgery for recurrent anal cancer Seton insertion for symptomatic anal fistula (including perianal Crohn’s) Colectomy and proctectomy for colitis refractory to medical treatment (excluding acute severe colitis treated urgently) Pelvic exenteration procedures* Multivisceral resections for locally advanced colon cancer*
Priority 4	Transanal or rectal resection for benign rectal polyp Colonic resection for benign colonic polyp Ileoanal pouch surgery Completion proctectomy after colectomy for IBD
Consider further deferral	Uncomplicated incisional hernias Abdominal wall reconstruction Reversal of Hartmann’s procedure Closure of diverting ileostomy Rectal prolapse surgery Non-urgent proctology procedures

Vulnerability of the Individual Patient

Vulnerability of the individual patient undergoing elective surgery needs to be assessed against the risk and consequences of acquiring nosocomial COVID-19 infection. The Carlson vulnerability score has been adapted to reflect emerging evidence about respiratory support in patients with COVID-19:

- V1 indicates that a patient is unlikely to have excess mortality when compared to a fit individual under 70 years old in the event of COVID-19 infection.
- V2 is ascribed to a patient who is likely to have significant excess mortality compared to a completely fit individual under 70 years old in the event of COVID-19 infection but would probably receive respiratory support including ventilation if required.
- V3 indicates that a patient would be extremely likely to succumb to COVID-19 as a hospital-acquired infection and would not be likely to receive respiratory support or invasive ventilation during the pandemic due to either constrained resources and/or poor overall prognosis.

https://journals.lww.com/dcrjournal/Documents/Prioritizing_Access_to_Surgical_Care_During_the.99694.pdf

Environmental Risk

As the prevalence of COVID-19 infection within a healthcare environment determines the risk of nosocomial infection and thus the risk of postoperative mortality, consideration must also be given to the environment within which elective surgery is undertaken. Healthcare environments may be rated as:

- E1 where the entire institution is “cold” i.e. free or almost free of COVID-19 cases
- E2 where there are segregated services on the same site with an almost COVID-free “cold” facility assigned solely to elective surgery
- E3 where there is a high prevalence COVID-19 infection and so also a high level of acquiring nosocomial infection postoperatively.

Maintaining a “cold” site is a priority for resumption of elective surgery. It is imperative that individual institutions have a local understanding of this challenge and develop local solutions to deliver elective surgery safely. Maintaining a “cold” site will incorporate arrangements for staff testing, assignment of surgical staff and contact tracing in the event of a staff member or patient developing COVID-19.

Any E1 or E2 “cold” site used for elective surgery must also have appropriately trained medical and nursing staff, adequately resourced theatre facilities and personnel, inpatient support services from laboratories, transfusion services, radiology and pathology, surgical cover arrangements and critical care resources or arrangements to manage patients who develop postoperative complications. Physical distancing will need to be practised in communal and, where possible, clinical areas. Patients who develop postoperative COVID-19 infection within the “cold” site will need to be transferred expeditiously for further care within a “hot” site.

Recommendations about testing of patients and staff have been made by NHS England and will be continuously updated.

<https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/05/Operating-framework-for-urgent-and-planned-services-within-hospitals.pdf>

Enough supplies of appropriate PPE will be required for use in “cold” sites to maintain low rates of nosocomial infection while COVID-19 is endemic. “Cold” site supplies should not detract from availability of PPE at “hot” sites.

<https://www.rcseng.ac.uk/-/media/files/rcs/coronavirus/recovery-toolkit-tool-2--risk-assessment.pdf>

Preparing Patients for Elective Surgery

Patients preparing for elective surgery will need to be prepared preoperatively to minimise the risks of nosocomial infection with the following key measures:

- strict self-isolation for 14 days prior to admission
- negative preoperative screening for symptoms
- negative preoperative swab testing

All patients undergoing elective surgery should be advised and prepared to undertake strict self-isolation for 14 days prior to surgery. Exercise during this time should still be encouraged within the limitations of strict self-isolation. Members of the same household should ideally also be in isolation during this period. Innovative use of telemedicine prehabilitation to encourage exercise and good nutrition may help offset the risks of potential for sedentary behaviour while maintaining self-isolation and “physical distancing”.

<https://journals.lww.com/annalsofsurgery/Documents/Prehabilitation%20Telemedicine%20in%20Neoadjuvant%20Surgical%20Oncology%20Patients%20.pdf>

Screening questions via remote contact to exclude symptomatic COVID-19 infection should be carried out preoperatively just prior to testing.

Asymptomatic patients will need testing for SARS-CoV2 infection within 72 hours of planned surgery. Home testing kits would be ideal but may require longer to process. Drive through facilities for 48-hour testing would be preferable over hospital attendance. It is likely that point of care testing will also become more widely available. Policies for managing patients with positive tests, self-isolation, deferral of surgery and repeat testing will need to be in place.

It is recognised that upper respiratory swab testing using polymerase chain reaction techniques has a false negative rate of around 25%. A normal lymphocyte count may add some reassurance but again may be normal in the presence of infection.

CT chest has a useful diagnostic role in symptomatic and emergency surgical patients. However, it is a poor screening tool for detecting asymptomatic COVID-19 infection, and so we are no longer recommending its routine use in the preoperative preparation of patients undergoing elective cancer surgery. The Intercollegiate advice has been updated to reflect this position.

<https://www.rcseng.ac.uk/coronavirus/preoperative-chest-ct-imaging-guidance/>

Surgical Decision-Making and Enhanced Patient Consent

Given the inherent increased risks of acquiring COVID-19 infection during the pandemic, even within a “cold” environment, the increased risks of pulmonary complications, need for ventilatory support and associated mortality should be discussed with all patients in addition to the relevant standard procedural and patient-specific risks. The inability for family to visit during hospitalisation needs to be explained. Patients should also be advised that they will need to self-isolate, if independent, on discharge from hospital.

Patient wishes with respect to resuscitation status and management in the event of adverse outcomes should be sought and documented.

Decision-making should be shared with colleagues and patients. The need for risk-averse surgery in vulnerable patients should be specifically discussed and documented, including reference to the context of those decisions in the COVID-19 pandemic.

Although higher rates of open surgery and stoma formation were recommended during the surge phase, it is now reasonable for surgeons to return to normal practices during recovery, especially with anastomosis formation and with cautious use of laparoscopy where there is clear patient benefit.

Surgical Approach during COVID-19

As evidence emerges that that SARS-CoV-2 is even more contagious than initially thought (https://wwwnc.cdc.gov/eid/article/26/7/20-0282_article), the choice between open and laparoscopic surgical techniques is a public health rather than surgical issue, with safety of the theatre team as important as patient safety. SARS-CoV-2 has also been identified in peritoneal fluid.

<https://journals.lww.com/annalsofsurgery/Documents/SARS-CoV-2%20is%20present%20in%20peritoneal%20fluid%20in%20COVID-19%20patients.pdf>

Open surgery should have provision for plume extraction from electrocautery and other energy devices and may be the safer option for all theatre staff and hospital environments while the safety of laparoscopy remains unproven in the setting of COVID-19. This is particularly relevant where the patient’s testing status is unknown or there is clinical concern. There will undoubtedly be emerging data to advise on the safety of laparoscopic surgery to inform the debate. The public health issue will also recede as prevalence of infection in the population falls and with regular testing of patients and staff.

Maintaining low levels of COVID-19 infection within a “cold” site will lower the threshold for use of laparoscopy in circumstances where there is clear patient benefit and in the setting of adequately resourced theatres with appropriately skilled and experienced staff. The entire theatre team should wear PPE regardless of surgical approach. The sensitivity of the SARS-CoV-2 testing at 75% makes this imperative.

Any surgeon undertaking laparoscopy should be demonstrably familiar with best practice for safe laparoscopy in the setting of the COVID-19 pandemic. These include, but are not limited to, small port site incisions, good seals on all ports, closed carbon dioxide insufflation, matching instrument diameter to port size, application of particle filters, aspiration of pneumoperitoneum after use of energy devices and suction extraction of pneumoperitoneum at the end of the case. All proponents of the safety of

laparoscopy during COVID-19 have stressed the need to mitigate against potential risks with PPE and best practice.

<https://journals.lww.com/annalsofsurgery/Documents/Current%20Evidence%20for%20Minimally%20Invasive%20Surgery%20.pdf>

<https://bjssjournals.onlinelibrary.wiley.com/doi/epdf/10.1002/bjs.11679>

<https://onlinelibrary.wiley.com/doi/epdf/10.1111/codi.15112>

Transanal procedures with “pneumo-rectum” insufflation should be treated with the same level of precaution as laparoscopy, and only carried out if essential to good patient care.

Surgical Personnel and Training

As elective services resume, and the theatre environment becomes less constrained, it will no longer be necessary to undertake dual consultant operating for all cases. There is also scope for re-introducing operative surgical training, especially for senior trainees. ACPGBI and the Dukes’ Club shall shortly be providing guidance on opportunities in training.

Ensuring Access for Patients to Elective Colorectal Surgery

Elective patients need to undergo surgery in the safety of “cold” environments. Not all institutions will be able to establish “cold” sites for elective colorectal surgery. Some institutions may also need to retain high levels of hospital and critical care capacity to ensure ongoing management of patients with COVID-19 during future surges.

Ensuring access for colorectal cancer patients may require local or regional collaboration with prioritisation boards retaining oversight of all elective patients needing surgery to ensure that all patients are treated in a timely manner to avoid a postcode lottery.

Responsibility and accountability for the phase of clinical care lies with the treating institution and clinician at the time of care. Transfer of patient care between institutions should be accompanied by formal referral, transfer of imaging and pathology reports, and ideally direct communication between referring and accepting surgeon. The newly assigned surgeon should have opportunity to establish a relationship with the patient in order to review fitness for surgery, explore patient wishes and preferences, and obtain informed consent.

Postoperative multidisciplinary team review of histology and discussion about adjuvant treatment and surveillance will also need to be communicated back to the referring institution, together with timing of transition of further patient care. Patients should be given contact details for the treating institution’s clinical nurse specialists for postoperative advice.

Audit data should be collected and submitted to national databases on all patients treated electively during COVID-19 to ensure high quality data to inform future service provision.

Future Revisions

Given the evolving and uncertain nature of the SARS-CoV-2 pandemic, and likelihood of emerging data on all issues considered here, it is anticipated that continued and regular revision will be needed during the coming months. The next planned review will take place by 30 June 2020.

Nicola Fearnhead, Peter Sagar, and Ciaran Walsh on behalf of the ACPGBI Executive

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