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COVID-19 Pandemic: Considerations for resuming normalcy in colorectal service

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Synopsis

- This ESCP guidance focuses on a proposal of conceptual framework to resume standard service in colorectal surgery
- The proposed conceptual framework is a schematic and stepwise approach including:
 1. In-depth assessment of damage to non-COVID-19 related colorectal service

2. Return of service: Integration with the COVID-19 specific service and the existing operational continuity planning
 3. Safety arrangement in parallel with minimising downtime
 4. Required support for staff and patients
 5. Aftermath of the pandemic and continued strategic planning
- This will be a dynamic guidance with ongoing updates using critical appraisal of emerging evidence. We will welcome input from all stakeholders (statutory organizations, healthcare professionals, public and patients). Any new questions, new data, and discussion are welcome via <https://www.escp.eu.com/guidelines>

Background

The outbreak of COVID-19 is a global pandemic that has changed our health service operation drastically with reduction or no service of outpatient clinics and elective surgeries. It is difficult to predict the direction of pandemic with potential recurrence of outbreaks. Some restrictions in society are likely to continue to contain the spread of COVID-19 for the foreseeable future, so it is expected that a degree of alteration in hospital service will continue.

The ESCP Guideline Committee have collated the available knowledge and strategies to resume non-emergency colorectal services with a proposal of conceptual framework.

Methods

We have collated information and data to formulate statements based on the followings:

- Review of existing literature, particularly related to COVID-19.
- Review of other available guidelines, statements and documents by statutory organizations and major surgical societies.
- Review of general concepts and framework of recovery strategies in healthcare, from natural disaster and conflicts.

We aimed to address the following clinical questions:

- How should we start planning to resume normal service?
- What assessment do we need to restart normal service?
- What could be re-started first and as a priority?
- What are the key numbers/indicators we could consider when restarting and stepping up normal service?
- What setups are required to restart service?
- How much screening of patients for COVID-19 is continuing to be required?
- How much of COVID-19 specific pre-operative preparation needs to be continued?
- How could we ensure safety for both staff and patients?
- How could we reduce exhaustion and stress of both staff and patients?
- How best could we communicate information and support for patients regarding safety of coming to hospital and having treatment?

- What can we do to prepare for possible recurrence of outbreak?

Contextualization

The present guidance is of general nature, as it is important to reflect the extent of the COVID-19 outbreak according to the situation in each country, local region, hospital and surgical team and offer an adaptable guidance. It is primarily aimed at health care professionals and hospital managers in areas where the COVID-19 is currently in Phase 6 (pandemic) and/or post-pandemic according to World Health Organization (WHO) pandemic phase definition [1]. Readers are recommended to refer to country-specific plans for easing the lockdown, which in Europe are being developed autonomously by each state and proposed timescales are different [2].

Due to the rapidly changing situation and the fluidity of information, this is an interim guidance at the time of writing. We are intending to evolve this as a dynamic guidance on our website with ongoing updates using critical appraisal of emerging evidence and incorporating discussions and opinions based on experience that may be useful to consider. For this reason, we will welcome input from all stakeholders (statutory organizations, healthcare professionals, public and patients) to continue improving this guidance and to make it adaptable to real-time clinical changes. Any input including new questions, new data, and new information along with suggestions and discussion are welcome via <https://www.escp.eu.com/guidelines>.

A detailed guidance disclaimer by the European Society of Coloproctology can be found here: <https://www.escp.eu.com/guidance-disclaimer>

Proposal of conceptual framework

The proposed schematic and stepwise approach to resume normal service is as followings:

1. In-depth assessment of damage to colorectal service due to the pandemic
2. Return of service: Integration with the COVID-19 specific service and the existing operational continuity planning
3. Safety arrangements in parallel with minimising downtime

4. Required support for staff and patients
5. Aftermath of the pandemic and continued strategic planning

In-depth assessment of damage to colorectal service due to COVID-19 pandemic

Before proceeding to recovery of service, assessment of the current situation due to disruption of normal service and a thorough evaluation of the available facility and residual capacity should be undertaken.

Consequences of disruption to normal service

It is important to start with damage assessment due to lack of access to health care and social support resources, and disruption of continuity of care during the pandemic. These may include 1. delayed diagnosis and delayed treatment, 2. exacerbation of pre-existing risk factors and clinical conditions, 3. backlog of deferred investigations, diagnostic and therapeutic procedures [3, 4].

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A thorough assessment and planning is required to address the above points, particularly:

- To check all the waiting lists and contact patients who are likely to require urgent intervention.
- To assess if the patient's treatment need has changed or not and decide the appropriate timing to offer necessary intervention (e.g. surgery required urgently, could wait, re-assess in outpatients, re-assess by telephone/virtual clinic). A documentation of assessment such as status of condition and symptoms alongside the use of ASA and co-morbidity index may be helpful for clarity of decision making. Further documentation should be made of the patient's attitude towards risking treatment in the COVID era.
- To ensure if the pre-pandemic assessment of co-morbidities and functional capacity is still valid for the patient to be considered for elective surgery. The patient may have had

COVID-19 infection and associated decline in general health and/or respiratory/renal function.

- Re-triaging to establish priorities needs to be extended to all endoscopy and outpatient waiting lists, either simultaneously or in phases according to available resources.
- To assess the available personnel to resume service. Planning should not only consider the number of available staff, but also the availability of staff with adequate skills required for operations and procedures and whether there is any pandemic-related issue (e.g. shielding, stress, bereavement, personal and familial arrangement) that may restrict staff to return to activities in full capacity.

Return of service: Integration with the COVID-19 specific service and the existing operational continuity planning

Shift from risk mitigation strategies during COVID-19 pandemic

Many societies, both in colorectal surgery and gastroenterology, have advocated risk mitigation strategies during COVID-19 pandemic [4-16]. The default position of all the guidelines and advices has been to opt for the safest option.

ESCP Proposals

- It is essential all patients are managed under risk mitigation pathway/plan until further notice.
- If the timing of definitive treatment is likely to be delayed further, risk-mitigating or emergency intervention should be considered. A few examples of such interventions may include optimising immunosuppression and nutrition, drainage of abdominal/perianal sepsis and formation of stoma.
- All patients need to be built-in to normal service in phases either with a definitive management plan and timing to address it or discharged with a safety net plan. Advice should be provided on what to do if symptoms/ condition worsen if the patient is expected to monitor symptoms in the community.

Numbers and indicators to be considered for transitioning service

Trend of infection curve

The median incubation time for COVID-19 has been estimated to be 5 days, with 97.5% of those who develop symptoms doing so within 14 days [17,18]. The American College of Surgeons have proposed a decrease in COVID-19 incidence for at least 14 days should occur prior to transitioning to provide elective surgical services [19]. However, as the data of virulence and knowledge on transmission emerge, this timeframe may need further review.

Basic reproduction rate

The basic reproduction rate (R_0) is an estimate of the disease speed of spread in the population [20]. This has been cited often in the context of policy decisions on quarantine, social isolation and lockdown. The modelling was established during the influenza pandemic a decade ago and gives a valuable insight into the pandemic. Reaching a certain preset R_0 as a threshold could be a useful indicator to upscale COVID-19 services.

Rate of COVID-19 infected patients currently admitted against available beds

A staged approach according to the in-hospital COVID infection rate has been recommended by the Spanish Surgeons Association (AEC) [21]. It proposes to de-escalate the level of alert and to resume clinical practice according to defined phases in a sequential fashion based on the number of COVID-19 infected patients in hospital. This type of approach and the scale was endorsed by 89.2% and 89.1% of surgeons according to a national survey by the AEC and the European Association for Endoscopic Surgery (EAES), respectively [21].

A major pitfall of this approach is that the infection rate in the hospital is dependent on local health policy, particularly regarding admission of patients with mild symptoms. It may also depend on the type of hospital (secondary or tertiary) and other specialties in the setting (e.g. co-existing with an infectious disease department, scale and expertise in intensive care). The figures could significantly differ from country to country and from facility to facility.

Number of available beds in intensive care/high dependency unit bed

This is probably a useful indicator to consider when choosing the type of operations to re-start along with the extent of the patients' comorbidities. It may not simply be an absolute number of empty beds; the number of isolated beds reserved for elective non-COVID cases and ability to escalate care should also be noted. The US Centres for Disease Control and Prevention suggested several additional indicators, taking into account intensive care unit (ICU) resources such as the number of available ventilators [22]. As approximately 30% of COVID-19 in-patients required ICU admission [23], hospitals are likely to continue reserving some ICU beds capacity for COVID19 patients which may be adjusted according to the number of infections in the population whilst resuming non-COVID-19 service.

Operations such as pelvic exenteration or major resections for patients with multiple comorbidities are likely to need at least high-level care bed, possibly an ICU bed, with adequate staff cover. The availability of COVID-19-free ICU/HDU needs to be established prior to performing complex major surgeries.

Number of available skilled staff and equipment

The capacity of the service should be assessed taking into account availability of surgical theatres, recovery room, ventilators, endoscopes and instruments.

Assessment of availability of staff should not be limited to number of surgeons but also availability of anaesthetists and intensivists, theatre scrub staff, nurses, and healthcare workers needed to run theatres. Junior doctors and specialist nurses to support cancer care, stoma care and enhanced recovery may have been deployed to other services and their availability needs to be confirmed depending on the area of service to be resumed.

Inventory of disposable supplies should be checked and revised, in order to detect any shortage or outdated instruments during stoppage of elective operations [19]. Considering the prioritisation for other medical equipment required during the pandemic, it is essential to check if the normal supply chain for equipment and device and repair service required for resuming service have also returned to normal or at least to the level required to resume service, and if not, an alternative procurement process should be established. Sourcing of Personal Protective

Equipment (PPE) is vital to support resumption of service and increase of elective activities, to ensure personnel are protected.

ESCP Proposals

- Monitoring of the ongoing situation and up to date information from the World Health Organization, national government, local authorities and statutory organizations is necessary to determine the phase of pandemic in the local setting.
- Some of the suggested key numbers/indicators to consider are persistent downward trend of fall in number of infected patients, R_0 , numbers of COVID-19 patients in hospital, number of available beds (intensive care/high dependency) and availability of staff and equipment.
- To check whether supply chain and repair service for equipment, including PPE, required for resuming service has also returned to normal or at least to a level which is sufficient to restart the service.

Prioritisation of resuming elective surgery and outpatient clinic

In most countries and settings, an emergency service offering operations for cancers, sepsis, and other life-threatening conditions that require intervention within 72 hours was maintained during the pandemic.

Prioritisation by condition

In principle, the first priority cases for the resumed service will be for any condition that is not immediately life-threatening but needs an urgent intervention. Most of the cases in this urgent category are likely to be cancer, inflammatory bowel disease, anal fistula and benign conditions that need at least temporalizing.

A few examples include cancer or stricture that is progressing toward obstruction, not transfusion dependent but slow persistent bleeding cancer, highly suspicious lesions that need confirmation of pathological diagnosis to proceed to the next step of management (e.g. endoscopic/surgical biopsies). Potential interventions include either stenting, stoma formation or resection for obstructing or bleeding tumours or intra-abdominal sepsis ((e.g. in Crohn's disease),

colectomies for medically refractory colitis, repair of symptomatic hernias with recurrent obstruction, excision of transfusion-dependent haemorrhoids, but this is not an exhaustive list.

In the United Kingdom, categorisation of surgical cancer patients has been defined by NHS England and Healthcare Improvement Scotland as the followings [24,25]:

- Priority level 1a
Emergency: operation needed within 24 hours to save life.
- Priority level 1b
Urgent: operation needed within 72 hours.

Priority 1a and 1b have been covered under emergency service during COVID-19 pandemic and will continue to be dealt with under the scope of emergency care during transitional period.

Relevant priority categories for elective settings are:

- Priority level 2
Elective surgery with the expectation of cure: within 4 weeks to save life/progression of disease beyond operability.
- Priority level 3
Elective surgery can be delayed for 10-12 weeks with no predicted negative outcome.

The remaining category is level 4 which encompasses the patients who can wait for 3 months for an operation.

A few tools (eg scoring system) have been devised to aid the prioritization of patients needing surgical treatment. These tools take into account factors related to procedure, disease, and patients including vulnerability [21,26-28]. However, these may not necessarily conform to specific practice in colorectal surgery. Any devised scores should be subjected to rigorous assessment with regards to usefulness and validity.

Prioritisation by resource availability

The order of re-starting service may not always be in the order of clinical prioritisation. For example, non-urgent minor operations may be required to dry run a new and/or unfamiliar set

up (e.g. operation theatre not normally used for colorectal surgery with different equipment (lights, laparoscopic instruments etc), operating with staff unaccustomed to major colorectal operations and procedures, utilisation of purchased extra capacity at private hospitals) or as 'filler' of planned theatre lists with other major resections due to limited high level post-operative care.

Patient's particular comorbidities such as asthma, chronic obstructive pulmonary disease (COPD), hypertension, cardiac conditions, and diabetes may need more detailed assessment prior to consideration for an operation during this transition period. If proceeding to surgery, they are likely to require further input which may stretch the residual capacity of a depleted anaesthetic department.

Surgical planning may need to be on a weekly or short-term basis. If patients are required to self-isolate for 2 weeks theatre lists have to be planned in advance reducing flexibility. Expansion of capacity may be possible by extending hours of elective surgery in the evening and on weekends [19].

ESCP proposals

- Clinical urgency (conditions that require intervention within 4 weeks) should be the priority when resuming elective service.
- Prioritisation according to resource availability may be needed to test unfamiliar settings.

Considerations for elective operations and outpatient clinics

Operations in non-COVID-19 hospital/theatre

In the absence of a vaccine or definitive treatment of COVID-19, elective procedures should be considered in dedicated COVID-free areas, independent from other sections of the hospital, or they should be concentrated in COVID-free centres. Dedicated COVID-19-free, disease-specific hub can be adopted as a temporary measure, during transition [3,21,24,29].

Preparation of patients

Patients scheduled for surgery should be advised to self-quarantine before surgery, in order to reduce the risk of infection [21]. Currently this is set for 14 days with active monitoring (daily

record of temperature) by American College of Surgeons and ACPGBI [27,30]. Patients should be counselled in depth about the rationale of strict self-quarantine, as it has been reported that more than half of viral transmission is likely to have occurred from asymptomatic people [31]. Patients could be telephoned 24-48 hours before admission and screened for Fever, Travel, Occupation, Cluster and Contact (FTOCC), as well as for respiratory or gastrointestinal symptoms, and anosmia and/or ageusia [21]. All colorectal elective patients should continue to be tested, with serology and RT-PCR 48-72h before surgery, possibly in combination with preoperative chest CT 24h before, as poor postoperative outcomes have been reported in positive patients who are asymptomatic at surgery, with up to 44% patients admitted to the ITU postoperatively and 20-24% mortality [27,32]. Drive-through facilities or home testing would be ideal to avoid an additional hospital attendance [27].

Patients should be encouraged to exercise within the limitations of self-isolation, and advice/input via telemedicine could be used to optimise prehabilitation, especially focusing on moderate exercise and good nutrition [27].

Outpatients clinic

Outpatient clinics should be planned with consideration for spacing to maintain social distancing and avoid congestion with sufficient time interval between appointments. Patients should be asked to attend on their own or with the minimum number of escorts.

ESCP Proposals

- Elective operation should be considered in COVID-free zone or hub.
- Pre-operative preparation of patients should be continued as per during COVID-19 pandemic with RT-PCR test +/- CT chest
- Planning for outpatient clinics requires consideration for spacing and avoiding congestion

Embracing different approaches adopted during COVID-19 pandemic

Telehealth and telephone clinics

Teleconsultation or virtual clinic could be implemented and continued if installed during the pandemic, in order to reduce in-person attendance in outpatient clinics [21].

Use of telephone or video conferencing should be considered to facilitate communication between patients and families/relatives after surgery to avoid unnecessary visits and crowding in small areas. Other areas that this technique could be extended to are inter-specialty consultations (between General Practitioners and Coloproctologists), multidisciplinary meetings or e-signatures of informed consent [21]. The latter would need discussion with medicolegal experts and should be implemented according to local policies.

Use of apps has been suggested for several aspects of patient management in coloproctology. Screening services for colorectal cancer have been developed using the Android interface [33]. Telehealth has proven beneficial in colorectal surgery, for example to accelerate postoperative recovery [34], to deliver virtual outpatient consultation [35], or to monitor stoma output [36,37]. Remote monitoring could be used to identify patients with symptoms of alert (e.g. temperature) and to track COVID-positive patients [38].

These modern techniques need to be based on a secure platform. This depends on available infrastructure and will require commitment from hospital management to invest in IT system to facilitate smooth operation and ensure security of information exchange. The setup may need to be subjected to rigorous legal advice prior to installation for governance purpose and requires ongoing input from patients with regards to accessibility, usability and acceptance.

ESCP Proposals

- Newly adopted technologies during COVID-19 pandemic could be continued to conform to social distancing and ease immediate pressure on service.

Safety arrangement in parallel with minimising downtime

Establishing safety of the workplace

Instructions regarding PPE in the transition period

Appropriate level of PPE should be available for all procedures and healthcare workers should have access to the specific PPE required, as well as the administrative and cleaning staff, to maintain safety. Conventional PPE can be used in COVID-19 negative patients if adequate screening and testing have been performed [21].

During hospitalization, the personnel on the ward should use PPE, frequent hand-washing, and social distancing. During complex wound dressing and stoma management, eye protection and masks are recommended; in a COVID-19 infected case, a higher level of PPE should be available and used for these procedures [11,21].

Although no case of oro-faecal transmission has been reported so far, it is prudent to err on the side of safety. Whilst gastroscopy is considered to be an aerosol generating procedure requiring full PPE and high levels of ventilation, colonoscopy, flexible sigmoidoscopy, rigid sigmoidoscopy, proctoscopy, anorectal physiological testing and endorectal/endoanal ultrasound require only standard PPE for a low risk patient and can be carried out in rooms with a lower number of air changes. [11,39].

Measures should be adopted to allow early discharge in safe conditions, by means of accurate perioperative management, enhanced recovery, and use of remote postoperative monitoring and consultation [19].

Cleaning and other safety measures

Cleaning, disinfection and sterilization should be continued using standard methods [40].

It is recommended that social distancing should continue to be respected whenever possible, particularly in enclosed office environment.

Testing of staff for COVID-19

It is encouraged that each hospital develops local guidelines and pathways for personal and patients testing, including possibility of re-testing of staff with symptoms who were negative at the first testing as false negatives can occur. [21] Healthcare workers being reincorporated after isolation or quarantine for contact with COVID-19 or found positive at SARS-CoV2 test must be screened, ideally with serology and RT-PCR. All Healthcare workers allocated to the sector of the hospital or working in a COVID-19-free hospital should be tested before attending the centre with repeated testing at scheduled intervals.

ESCP Proposals

- PPE level during transitional period should be maintained at the same level as during the pandemic
- No change is required to cleaning, disinfection and sterilization methods

Required support for staff and patients

Support for staff

A proactive action should be taken to detect stress, fatigue, burnout and psychological struggles among healthcare workers during the de-escalation phase, especially in those who suffered from COVID-19 infection [19]. There is a possibility of anxiety towards recurrence of outbreak, excessive alcohol intake and distress from redeployment to unfamiliar working environment. In some cases, prolonged absence from work to care for families and other personal issues may be required; it is recommended to shield workers with high-risk medical conditions.

The services established to help healthcare workers struggling to face the pandemic should be kept in place in order to provide a support net for the personnel during resumption of elective activities.

Many health authorities and training bodies have set up helplines for healthcare professionals [41,42]. The Physician Council of Barcelona (Colegio de Medicos de Barcelona, COMB), for example, established a telephone-based service to support healthcare workers who are experiencing psychological stress, and similar initiatives are being offered to struggling doctors at local hospitals (e.g. Hospital Vall d'Hebron in Barcelona, Spain [43,44]). The British Medical Association (BMA) [42] produced a detailed guidance directed to those who manage staff (line manager, general practitioner employer, senior member staff), in order to identify healthcare workers who are struggling and prevent this from happening. According to a BMA charter for mental wellbeing [45], employers are advised to build a supportive culture, develop a wellbeing strategy, create healthy workplaces, tackle the stigma around mental ill-health, foster peer support, ensure support services are accessible and of high-quality, and ensure services have the confidence of those they are intended to help.

ESCP Proposals

- Consideration should be given to staff wellbeing including appropriate support and signposting to helpline

Consideration for information to patients

Most patients with benign and chronic, non-life-threatening conditions are not receiving treatment or in-person assessment since the stringent lockdown measures have been adopted [4,29]. Prolonged period of 'stay home' may have generated excessive anxiety and some patients will present late to hospital or may remain reluctant to seek medical help.

To alleviate anxieties and address uncertainties, patients should be provided with detailed information ahead of their hospital visit and planned operation. The information that could be included in such a letter/leaflet is:

- Patients attending outpatient clinics should have no COVID symptoms and the appointment should be postponed until symptom free for 14 days.
- Patients' use of masks in the waiting areas is recommended. There are many countries mandating people to wear simple cloth mask in public transport and indoors as WHO have changed their position and are now recommending their use [46].
- Patients undergoing elective operation should be counselled in depth well before surgery. Counselling will include the usual explanations on general perioperative complications and additional COVID-19 related risks such as poor outcomes in the event of COVID-19 infection. The proposed operation will proceed only after well-informed consent is given by the patient and the consent should be clearly documented.
- During the postoperative hospital stay, visits by other families and friends may be restricted and kept at the minimum. Any visitor should be temperature checked and asked to adhere to protective measures, including frequent hand washing and use of masks.
- It is likely that there will be a different arrangement for recovery from surgery during the post-COVID-19 pandemic period, with earlier discharge, community-supported recuperation and continued isolation at home.

ESCP Proposals

- Consideration should be given to patients who may have increased level of anxieties to attend hospital following lockdown and reluctant to seek medical help.
- Thorough information should be provided prior to hospital visit and/or operation.

Aftermath of the pandemic and continued strategic planning

It is essential that a formal and sound analysis of strategies, guidance and planning during the COVID-19 pandemic should take place in parallel with recovery efforts. This is both to review the validity of the implemented plan for a COVID-19 outbreak and to prepare for a possible recurrence of a pandemic peak.

Regional and local rates of infection should be monitored, and thresholds should be set in order to define the necessity to take a step back if COVID-19 rates increase again [19].

ESCP Proposals

In principle, we should look into:

- Adequacy and extent of preparation of pandemic: infrastructure, zoning of hospital/separation of non COVID/COVID areas,
- Chain of equipment supply including amount, procurement process and reduced on single suppliers
- COVID testing strategy
- Refinement of the current COVID framework/protocol based on emerging research outcomes

and

- Continue monitoring the number of COVID-19 infections and switch the plan back to contingency plan in the event of a resurgence of infections or a recurrence of an outbreak.

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