

COVID-19: GOOD PRACTICE  
FOR SURGEONS AND  
SURGICAL TEAMS



Royal College  
of Surgeons

ADVANCING SURGICAL CARE

COVID-19

# GOOD PRACTICE

## for Surgeons and Surgical Teams



Professional and Clinical Standards

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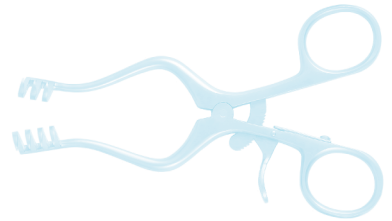
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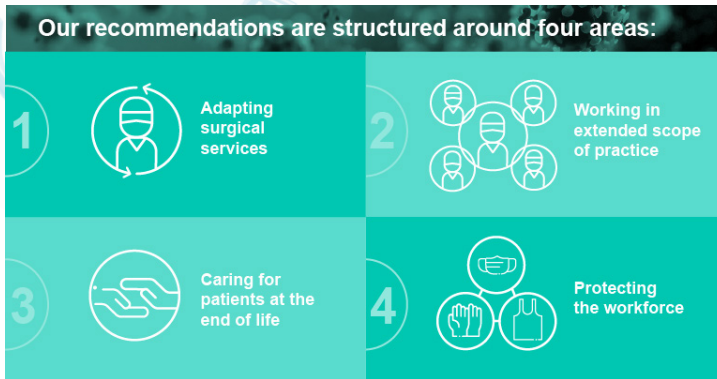
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# A. Introduction



As healthcare systems around the world are prepared to operate at more than maximum capacity for a number of months during the COVID-19 outbreak, several adjustments in surgical services will be required. This guide brings together a series of recommendations drawing from existing College guidance and recently published literature on COVID-19 from national and international bodies to support surgeons and surgical teams as they respond to the outbreak.

In these exceptional circumstances, we recognise that hospitals and surgical units will have to make complex decisions very quickly. Our aim is not to be overly prescriptive, but to make broad recommendations which can be adapted to support individual circumstances based on surgeons' and teams' professional judgement.

**OUR  
RECOMMENDATIONS  
ARE STRUCTURED  
AROUND FOUR AREAS:**

- Adapting surgical services
  - » Triage of non-emergency surgery
  - » Clinical networks
  - » Rotas
  - » Virtual outpatient clinics
- Working in an extended scope of practice
  - » Working beyond one's regular scope of practice as part of a team
  - » Retired surgeons and trainees
- Caring for patients at the end of life
- Protecting the workforce
  - » Infection prevention
  - » Ensuring surgeons' and surgical teams' well-being

We will be updating this guidance regularly, as more information emerges. We will also be signposting relevant advice from other bodies including the Surgical Specialty Associations on our information hub for COVID-19 which can be found at: [www.rcseng.ac.uk/coronavirus/](http://www.rcseng.ac.uk/coronavirus/).

# B. Adapting Surgical Services



## 1. TRIAGE OF NON-EMERGENCY SURGERY

NHS England has asked hospitals in England to postpone elective surgical procedures for three months starting on 15 April. In Wales, Scotland and Northern Ireland, elective operating has already been halted. It is likely that such measures will eventually have to be taken across all four nations.

Hospitals and surgeons should therefore carefully review all scheduled elective procedures with a plan to minimise, postpone or cancel scheduled operations, endoscopies and other invasive procedures as necessary, and shift inpatient diagnostic and surgical procedures to outpatient settings, when feasible.

When it comes to defining surgical emergencies, it would be useful to bear in mind the NCEPOD classification of immediate, urgent and expedited. In addition, although some surgical cases can be postponed indefinitely, many others are associated with progressive disease (eg cancer or vascular disease) which will continue to progress at variable, disease-specific rates. As these conditions persist or advance in the absence of surgical intervention, the decision to postpone or perform a surgical procedure should

take into account several considerations, including the risk that a delay over several months may risk having cases reappear as more severe emergencies at a time when, in the midst of the COVID-19 outbreak, they will be less easily handled. More specifically:

- Hospitals and surgical units should consider their patients' surgical needs and their capacity to meet those needs in real time as the impact of the outbreak develops.
- The need for surgery should be established by a surgeon with expertise in the relevant speciality to determine what risks will be incurred by case delay.
- Logistical capacity for the procedure in a given hospital should be determined by theatre managers taking into consideration facility resources (beds, staff, equipment, supplies, etc.) and patient safety considerations.
- The risk to the surgical patient should include a combined assessment of the real risk of proceeding and the real risk of delay, including the expectation that a delay of three months or more may be required to emerge from an environment in which COVID-19 is prevalent.
- Plans for triage should avoid blanket policies but rather rely on a day-by-day, data-driven assessment of the changing risk–benefit analysis, taking into account expert clinical opinion and a site-specific granular understanding of the logistical issues at play.



## 2. PROVISION OF SURGERY IN CLINICAL NETWORKS

As the pressure on surgical services increases over the coming months, services will benefit by being provided on a networked basis, via an interconnected system of service providers. This allows collaborative working (assisted by contractual agreements where required), flexible movement for clinical staff and robust patient transfer arrangements, according to clinical need.

To be effective, networking arrangements must have senior clinical and managerial endorsement and be supported by contractual arrangements and agreed, coordinated protocols of care.

Expertise and resources will be drawn from the entire network, enabling patients to be treated at the most appropriate hospital depending on the complexity of the case, the resources available and the competence of staff at the receiving hospital. Bed availability across the network will require careful coordination and planning.


Appropriate rapid triage facilities and theatres must be available at short notice, and there must be a clear delineation of responsibility for patient care. In addition to this, suitable handover must be viewed as

a priority so that each patient is clearly assigned under the care of a particular surgeon.

Robust handover and transfer arrangements must be agreed within the network, and early involvement of the ambulance service will be required. There need to be protocols and resources in place for hospitals which are less well equipped to be able to transfer patients quickly. Retrieval teams from more central, well equipped hospitals need to be available at short notice to avoid compromising patient care and it is critical that ambulance services are readily available for pre-hospital care.

Ambulances must be directed to the hospital most suited to the patient's particular needs and ideally for complex multi-system trauma patients, this will be the nearest level one trauma centre (or equivalent).

The initial assessment of patients with suspected surgical pathology can be completed by a senior clinician with the appropriate skills and competences to recognise when surgery may be required. This may be a surgeon or also a senior doctor in emergency medicine, acute physicians or (for children's emergencies) paediatricians who may then refer to a surgeon for more in-depth assessment, and to decide whether the surgery can be postponed. During the COVID-19 outbreak, decisions to operate should be



made jointly with the anaesthetic team taking into account the likely need for ITU and its availability.

In all cases, emergency surgery should be led by the most experienced member of the surgical team available. Emergency surgical cases may be managed appropriately by senior trainees or specialty doctors. This must be an active consultant decision. All patients admitted as emergencies must be discussed with the responsible consultant if immediate surgery is being considered.

Patients requiring emergency surgical opinion/intervention must be seen at an early stage by a surgeon with the required skills and competences. This doctor must be able to assess the patient and make an initial decision about the seriousness and urgency of their condition.

Those considered at high risk (eg patients with a predicted mortality of  $\geq 10\%$  using the appropriate specialty risk scoring mechanism) must be discussed with the consultant anaesthetist and be reviewed by a consultant surgeon as soon as possible if the management plan remains undefined and/or the patient is not responding as expected. All patients in this group must have their operation carried out in a timely manner under the direct supervision of a consultant surgeon and consultant anaesthetist; early referral for anaesthetic assessment is also essential to optimise peri-operative care.

In cases with predicted mortality of  $>5\%$ , a consultant surgeon and consultant anaesthetist should be present for the operation except in specific circumstances where adequate experience and the appropriate workforce is otherwise assured.

As an absolute minimum, for patients not considered at high risk, all emergency surgical admissions should be discussed with the responsible consultant within 12 hours of admission. Active and continued monitoring of the patient must be carried out and the consultant should be notified immediately if a patient's condition deteriorates.

If a patient is admitted but not taken to theatre (ie they are admitted for observation and conservative treatment) he or she must be seen by a consultant surgeon within a maximum of 24 hours from admission. As above, active and continuous monitoring of the patient must take place and the consultant must be notified immediately if the patient's condition deteriorates.



### 3. ROTAS

It is expected that in the early stages of the outbreak, surgeons will be able to take part in emergency on-call rotas in their individual specialty. Clearly defined contact pathways for named senior clinical opinion (specialty trainee or consultant) should be on a rota for all specialties likely to require regular interaction with the AMU. These include: geriatric medicine, respiratory medicine, gastroenterology, diabetes and endocrinology, rheumatology, neurology, cardiology, infectious diseases and critical care.

However, if the surgical caseload is reduced or there are fewer surgeons available due to sickness, it will become increasingly difficult to sustain the staffing of individual specialty rotas and a generic surgeon rota may become necessary. Surgeons on call should be able to manage the initial triage arrangements, carry out part of the surgery and manage the post-operative care, with remote support from specialist surgeons. Some operations will still require a specialist surgeon when available.

The Joint Guidance of Surgical Colleges on COVID-19 suggests that the workforce will likely break down into torso/cavity surgeons (vascular, general, urology) and extremity surgeons (orthopaedics, plastics), and recommends that, where possible, each site would have the presence of a torso surgeon and an

extremity surgeon with middle grades. The shift pattern could be 24hrs or 12hrs depending on numbers of surgeons and volume of work. Having a second consultant on call would be helpful to support the emergency workload, particularly if cases of self-isolation become more prevalent.


### 4. RESPONSIBILITY FOR PATIENTS IN INTENSIVE CARE UNITS

The management of patients admitted to hospital under the care of a surgeon and subsequently transferred to an Intensive Care Unit (ICU) is the responsibility of the entire medical team. Depending on the severity of illness of the patient and on the particular arrangements in individual hospitals, responsibility for the various aspects of postoperative management may be shared amongst the various members of the multidisciplinary team.

During COVID-19, decision making should follow NICE guidelines for the critical care in adults.

Surgeons should work collaboratively with all ICU staff when caring for a surgical patient admitted to an ICU and contribute to the patient management plan as required. There should be a written and verbal handover between the surgical

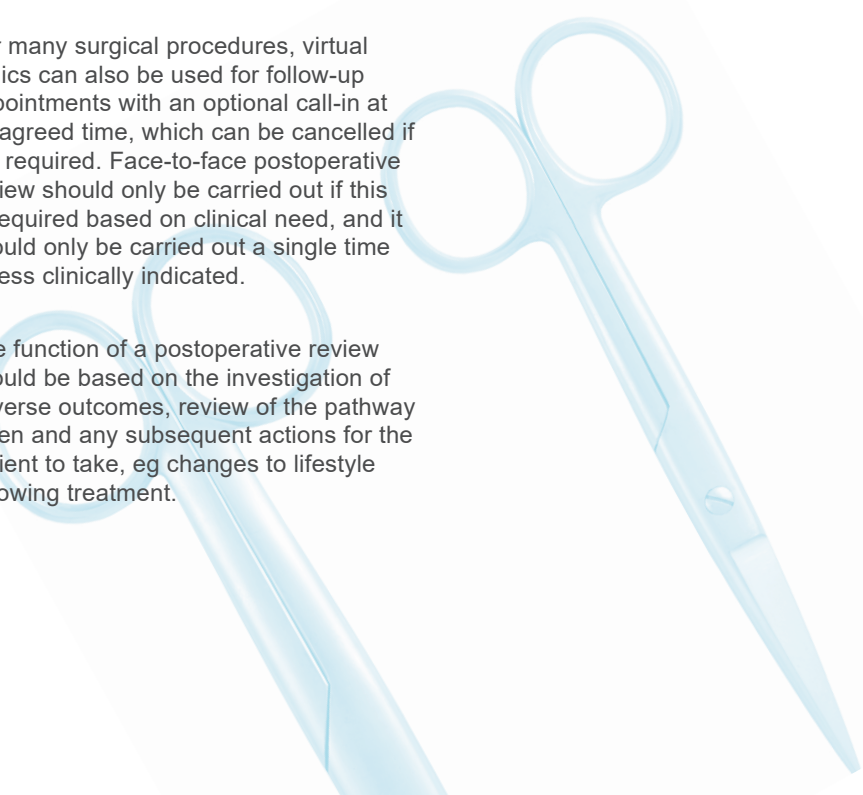




and intensive care team documenting the postoperative management plans.

## 5. OUTPATIENT CLINICS

Where appropriate, hospitals and surgical teams should aim to deliver virtual clinics for outpatient appointments for the duration of the COVID-19 outbreak to support infection control. Virtual clinics provide a direct contact to a named surgeon by video link, email or telephone.



For many surgical procedures, virtual clinics can also be used for follow-up appointments with an optional call-in at an agreed time, which can be cancelled if not required. Face-to-face postoperative review should only be carried out if this is required based on clinical need, and it should only be carried out a single time unless clinically indicated.

The function of a postoperative review should be based on the investigation of adverse outcomes, review of the pathway taken and any subsequent actions for the patient to take, eg changes to lifestyle following treatment.

# C. Extended Scope of Practice and Teamworking



## 1. WORKING BEYOND ONE'S REGULAR SCOPE OF PRACTICE AS PART OF A TEAM

The key principle throughout all recommendations in this document is that even at a time of severe pressure to services, teams and individuals, the main effort should be in employing practices and treatments which are based on evidence and are known to help patients. Shortcuts and untested adjunctive therapies should be avoided and all efforts should be placed in applying processes and procedures in which there is sufficient expertise within the service.

If unexpected circumstances require staff to act beyond their practised competencies, the service and the wider multidisciplinary team should provide support for clinicians in making the care of the patient their first concern. Specifically, surgeons may be required to extend temporarily the scope of their practice beyond the normal range of their expertise or they may be redeployed to support non-surgical roles in response to community need. This may be on a regular basis throughout the duration of the COVID-19 outbreak or on an 'as needed' basis.

In such circumstances, the following considerations should be taken into account:

- Identification of local need: the extended scope of practice should be best determined by an assessment of local need and defined in the context of wider service networks, where these exist. The appropriate scope of practice will be location-specific and depend on the existing training and skill set of the surgeon, available local facilities, linked services and existing or planned supportive relationships.
- Appropriate training – surgeons should receive appropriate training and support (including mentoring) in their extended scope of practice, whether this is non-core specialty areas or non-surgical areas.
- Teamworking and collaboration – surgeons working outside their core area of practice and their hospitals should establish cooperative, easily accessible and mutually supportive relationships with more specialised colleagues and hospitals.

Surgeons may be required to familiarise themselves with the World Health Organisation's guidelines for the Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected. In such cases, they should ensure they have been adequately updated in airway management and ventilation skills by a senior anaesthetist or intensivist.



## 2. RETIRED SURGEONS AND TRAINEES

Based on the government's emergency bill to strengthen COVID-19 response plans under Section 18a of the Medical Act (1983), temporary registration will be given to doctors, surgeons and nurses who left the register or gave up their licence to practise in the last three years, if they are willing to return to work. In this case, they will be deployed to hospitals and services based on clinical demand, so the above considerations (under C.1) about extended scope of practice, training and support should apply for all such clinicians returning to practice.

NHS England has asked returning clinicians to fill out a survey so their skills can be used as efficiently as possible: [www.england.nhs.uk/coronavirus/returning-clinicians/faqs-doctors/](http://www.england.nhs.uk/coronavirus/returning-clinicians/faqs-doctors/). For those who are based in Scotland, Wales or Northern Ireland, NHS England will be passed on to the relevant NHS body.

The General Medical Council and NHS Health Education England have also acknowledged that trainees may also be asked during this time to work flexibly and provide additional support in other clinical areas/specialties in their trust or in other sites, as health services respond to demand.

Trainees working across boundaries are likely to be working within the breadth of surgery although some may be deployed in a different clinical area. They must have appropriate induction and training and work under close supervision with appropriate support. Their postgraduate dean should be informed of plans to redeploy trainees of any grade and arrangements for redeployed trainees should be reviewed weekly with updates provided to the postgraduate dean to ensure they are adequately supervised in the host environment/specialty, and that they continue to work within the limits of their competence appropriate to their stage of training.

Where training is interrupted or learning outcomes are compromised during the COVID-19 crisis, these issues will be taken into account at the trainee's next ARCP which will inform future training requirements and placement planning.

# D. Caring for Patients at the End of Life

Unfortunately, regardless of any advance preparation by UK healthcare services, a percentage of COVID-19 patients will not survive the infection. The anticipated pressure on services may also have an adverse knock-on effect on the timely availability of various services to other patients.

Surgeons are often placed in situations where intervention and a period of increased medical support are required to improve a patient's medical condition. Premature death can be particularly distressing for all and reducing avoidable deaths will always be critical. In some cases, surgical intervention will be appropriate for critically ill and high risk patients. There will, however, be cases where surgical intervention will not increase the quantity or improve the quality of life of the patient. Surgeons should use their professional judgement in these circumstances and be cognisant of the College values as set out in Good Surgical Practice.

Judging whether an intervention will be of little or no benefit to the patient is often uncertain and can be dependent on the condition and expectations of the individual patient. A decision to withhold a surgical intervention can be difficult and can be compounded where there are differing views regarding the benefits of an intervention. The decision to pursue an interventional course often requires a multidisciplinary team.

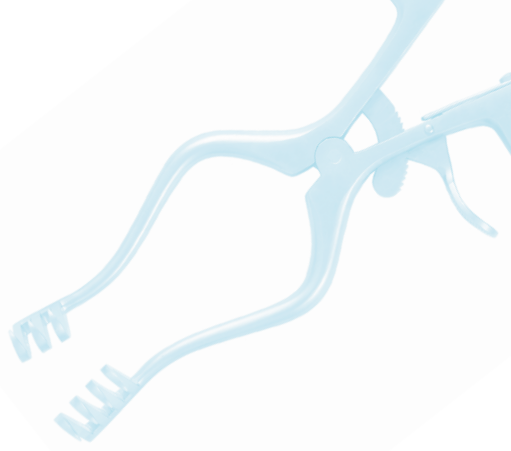
It is the responsibility of this team to carefully evaluate and explain the risks and expected outcomes of a surgical intervention to the patient.

It is important that surgeons have sufficient insight and awareness to identify procedures which will be little or no benefit to a patient, and to provide patients with all possible information about alternatives to such interventions or treatments. This process allows patients and (where relevant) their carers to make informed choices as to whether to proceed with a surgical intervention or treatment. More specifically:

- Patients and their carers should be assisted to develop realistic expectations of treatment, its objectives and potential outcomes.
- The surgical care team should be informed about Advance Care Plans and should encourage and assist patients to put one in place before the need arises.
- Advance care planning discussions are a means of clarifying the patient's wishes at the end of life. The surgeon should seek to discuss the patient's case with relevant professionals to ascertain:
  - » the appropriate treatment options at the end of life available to the patient
  - » the patient's wishes, preferences and beliefs to inform their best interests.

- Surgeons and other healthcare professionals should honour the wishes of the patient as expressed in an Advance Care Plan.

During COVID-19, the prohibition of visitation by relatives may make nuanced decisions very difficult. In such cases, an effort should be made to contact the family remotely and a consultation with the multi-disciplinary team, including the palliative care team will be important in this context to agree on the way forward.



# E. Protecting the Workforce



## 1. INFECTION PREVENTION

As people are asked to stay at home to minimise transmission of COVID-19, healthcare workers prepare to do the opposite as they go to work daily into clinics and hospitals. As the pandemic accelerates, it will be important for all surgeons and teams to familiarise themselves with appropriate infection control practices and ensure they have access to the right personal protective equipment (PPE). We recognise that this is an area of particular sensitivity for surgical teams and we remain in discussion with Public Health England to ensure surgeons receive clear advice.

As of 2 April 2020, the advice of Public Health England, Public Health Wales, Public Health Agency NI and Health Protection Scotland on PPE is the following:

### A. Higher Risk Areas and Procedures

#### 1. Performing an aerosol generating procedure (AGP) on a suspected or confirmed case

- disposable gloves
- disposable fluid repellent gown
- FFP3 respirator
- eye/face protection

#### 2. Working with suspected or confirmed cases in higher risk acute care areas where AGPs are regularly performed\*

\*ICU/ HDUs; ED resuscitation areas; wards with non-invasive ventilation; operating theatres; endoscopy units for upper Respiratory, ENT or upper GI endoscopy; and other clinical areas where AGPs are regularly performed.

- disposable gloves
- disposable plastic apron
- disposable fluid-resistant gown – sessional use
- FFP3 respirator – sessional use
- eye/face protection – sessional use

### B. Less High Risk Areas and Procedures

#### 1. Working in the operating theatre with suspected or confirmed cases – no AGPs

- disposable gloves
- disposable plastic apron
- disposable fluid-resistant gown – risk assess
- fluid resistant mask (type IIR) – single or sessional use
- eye/face protection

## 2. Working in an inpatient area with suspected or confirmed cases (direct patient care, within 2 metres)


- disposable gloves
- disposable plastic apron
- fluid resistant surgical mask (type IIR) – sessional use
- eye/face protection – sessional use

## 3. Working in an inpatient area with suspected or confirmed areas but not in direct patient care (ie not within 2 metres)

- fluid resistant surgical mask (type IIR)
- eye/face protection – risk assess sessional use

### Notes

- All PPE above are for single use unless otherwise indicated.
    - » single use = disposal after each patient contact
    - » sessional use = for a period of time where a healthcare worker is undertaking duties in a specific environment. The session ends when the healthcare worker leaves the environment.
  - If FFP3 respirators are not available, then FFP2 and N95 respirators can be used.
- Aerosol Generating Procedures (AGPs). The following procedures are currently considered to be potentially infectious AGPs for COVID-19:
    - » Intubation, extubation and related procedures, eg manual ventilation and open suctioning of the respiratory tract (including the upper respiratory tract)
    - » Tracheotomy/tracheostomy procedures (insertion/open suctioning/removal)
    - » Bronchoscopy and upper ENT airway procedures that involve suctioning
    - » Upper Gastrointestinal Endoscopy where there is open suctioning of the upper respiratory tract
    - » Surgery and post mortem procedures involving high-speed devices
    - » Some dental procedures (eg high-speed drilling)
    - » Non-invasive ventilation (NIV) eg Bi-level Positive Airway Pressure Ventilation (BiPAP) and Continuous Positive Airway Pressure Ventilation (CPAP)
    - » High Frequency Oscillatory Ventilation (HFOV)
    - » Induction of sputum
    - » High flow nasal oxygen (HFNO)



For patients with suspected/confirmed COVID-19, any of these potentially infectious AGPs should only be carried out when essential.

It is recommended that ventilation in both laminar flow and conventionally ventilated theatres should remain fully on during surgical procedures where patients may have COVID-19 infection. Air can bypass filtration if a respirator is not fitted perfectly or becomes displaced during use. Those closest to aerosol generation procedures are most at risk. The rapid dilution of these aerosols by operating theatre ventilation will protect operating room staff. Air passing from operating theatres to adjacent areas will be highly diluted and is not considered to be a risk.



## 2. ENSURING SURGEONS' AND SURGICAL TEAMS' WELL-BEING

During the increased pressures of the outbreak, it will be important not to neglect self-care. Specifically, members of the surgical team should make an effort to:

- Where available, make use of any support systems available locally, such as reaching out to mentors, peers, and colleagues. Senior clinicians should also be prepared

and willing to help others who are struggling or distressed.

- Be mindful of signs and symptoms of stress, fatigue, and burnout such as exhaustion, lack of concentration or inability to think clearly.
- Take breaks to recharge and where possible allow adequate time off between shifts.


Significant pressure can also be placed on teams and individuals when things go wrong, for example in the case of safety incidents. It is important both for the well-being of staff as well as the safety of patients that employers put in place arrangements to support staff who find themselves in this position. Specific consideration should be given to:

- Developing structured peer-support programmes which include one-to-one discussion with experienced peers following safety incidents. Reflection on the clinical aspects of the case with a knowledgeable peer can build resilience, avert destructive self-blame and enhance learning. Any such peer-support programme should include training for peer supporters.
- Additional arrangements such as mentoring, open opportunities for discussion and formal arrangements for operating in pairs where possible.



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