



Special Article

Surgery Guidelines In Covid-19 Pandemic; Bangladesh Perspective

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Introduction:

Society of Surgeons of Bangladesh (SOSB) is concerned about the current situation of Coronavirus Disease 2019 (COVID-19) and cautiously monitoring the pandemic from national, regional and international perspective. Our major concern is to ensure the overall safety of our fellow colleagues as well as of the patients seeking surgical care. Social distancing, crowd avoidance, and other techniques do help to flatten the curve of the dissemination of COVID-19, but beyond that, it is appropriate to be forward thinking regarding those patients who will, nevertheless, become infected.

Following a careful review of the current situation, the Society of Surgeons of Bangladesh (SOSB) recommend the following in addition to the "National Guidelines on Clinical Management of Coronavirus Disease 2019 (Covid-19); Version 5.0; 9 April, 2020":

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Steps

Infection Prevention and Educating Safety Measures

1. Educate surgeons and other health care workers about the preventive and safety measures.
2. Patients should receive appropriate and timely surgical care, including operative management, based on sound surgical judgment and availability of resources.
3. Decisions on surgery cases should be made on a daily basis, no later than the day before surgery, by a team comprising of surgery, anesthesiology, and nursing.
4. Minimal involvement of personnel during inpatient clinical rounds & patient education about on-arrival triage of the Surgery ward with minimum number of attendants must be ensured.
5. Non-operative management should be implemented wherever it is possible and reasonable.
6. Arrangements will need to be in place to test all potential admissions for COVID-19 at most 48 hours before surgery, with patients self-isolating for seven days before admission. Only patients who have no symptoms suggestive of COVID-19 infection, have been isolated for seven days and have a negative COVID-19 PCR test should be admitted.
7. Immediately minimize use of essential items needed to care for patients, including but not limited to, ICU beds, personal protective equipment, terminal cleaning supplies, and

ventilators. There are many asymptomatic patients who are, nevertheless, shedding virus and are unwittingly exposing other inpatients, outpatients, and health care providers to the risk of contracting COVID-19.

Emergency Procedures

1. Acute patients are the priority: COVID-19 should be evaluated in any patient referred acutely or needing emergency surgery initially by history, COVID-19 testing, and CXR.
2. Before every emergency procedure consider CXR as mandatory.
3. Any patient undergoing an abdominal CT scan for acute pain as an emergency presentation should have a CT chest at the same time, unless CT chest previously performed within 24 hours. Current tests for COVID-19, including CXR and chest CT, may be false negative.
4. Any patient currently prioritized to undergo urgent planned surgery must have self-isolated and be assessed for COVID-19 as above. The current greater risks of adverse outcomes from possible COVID-19 infection after surgery should be factored into planning and consent. Consider stoma formation rather than anastomosis to reduce need for unplanned post-operative critical care for complications.
5. Full PPE (disposable gloves and fluid repellent gown, eye/face protection and FFP2/3 mask) is mandatory at the operation theatre during emergency procedures.

Routine/Scheduled Procedures

1. Each hospital, health system, and surgeon should thoughtfully review all scheduled elective procedures with a plan to minimize, postpone, or cancel electively scheduled operations, until we can be confident that our health care infrastructure can support a potentially rapid and overwhelming uptick in critical patient care needs.
2. If any scheduled elective procedure is to be done; patients will need to consent to COVID-19 testing and self-isolation at the time of listing for surgery.
3. Full PPE (disposable gloves and fluid repellent gown, eye/face protection and FFP2/3 mask) is mandatory at the operation theatre during routine/scheduled procedures.

In theatre

1. Minimum number of staff in theatre.
2. Appropriate PPE (disposable gloves and fluid repellent gown, eye/face protection and FFP2/3 mask) for all staff in theatre depending on role and risk.
3. Smoke evacuation for diathermy / other energy sources.
4. Team changes will be needed for prolonged procedures in full PPE (disposable gloves and fluid repellent gown, eye/face protection and FFP2/3 mask). If higher risk patients are intubated and extubated in theatre – staff immediately present should be at a minimum.
5. **Operating theatres where Aerosol Generating Procedures (AGPs)** are regularly performed are considered a higher risk clinical area and full PPE is advised where COVID-19 is possible or confirmed.
 - a) **General anaesthesia is an AGP.** Full PPE consists of disposable gloves and fluid repellent gown, eye/face protection and FFP2/3 mask. It is imperative to practice sterile donning and doffing of PPE in advance. Procedural tasks are slower and more difficult when wearing full PPE.
 - b) **Naso-gastric tube placement may be an aerosol generating procedure (AGP).** Also, although chest compressions with CPR are not normally considered aerosol generating, compression patients often splutter and cough so full PPE in these instances should also be considered.
 - c) **AGPs are high risk and full PPE is needed.** Consider carrying out of PPE in a specified location.
6. **The smoke plume at laparotomy from coagulating instruments may also not be without some risk.** Given the current requirement to protect staff and other patients, a safety-first approach is needed.

Minimal access procedures

1. Consider laparoscopy only in selected individual cases where clinical benefit to the patient substantially exceeds the risk of potential viral transmission to surgical and theatre teams in that particular situation.

2. **Laparoscopy** is considered to carry **some risks of aerosol-type formation and infection and considerable caution is advised**. The level of risk has not been clearly defined and the level of PPE deployed may be important. **Advocated safety mechanisms (filters, traps, careful deflating) can be difficult to implement**.
3. **Only emergency endoscopic procedures should be performed**. Routine diagnostic work should be avoided and BSG guidance followed for urgent cases. Upper GI procedures are high risk AGPs and full PPE (disposable gloves and fluid repellent gown, eye/face protection and FFP2/3 mask) must be used.

Maintaining essential cancer surgery will follow these principles

1. For any cancer patient with symptoms or who is found to be COVID-19 positive, clinicians will need to decide locally when that patient will be considered fit for surgery; they will be considered alongside other urgent surgery within a hospital treating COVID-19 patients.
2. In line with national guidelines, balancing the urgency of cancer surgery against the risks of the procedure, particularly the risk of complications and a requirement for intensive care support.
3. Safety of patients, especially with regard to infection control and access to critical care as required.
4. Safety of staff undertaking surgery and other care.

Outpatient Clinic

1. 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.
2. Virtual clinics provide a direct contact to a named surgeon by video link, email or telephone.
3. 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.
4. 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.

5. 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, e.g. changes to lifestyle following treatment.

Upcoming Challenge for Future Surgical Practice

1. The patient demand for surgical and procedural care may be immense after the first wave of this pandemic as the surgeons & health care organizations have canceled non-essential & elective cases across the country.
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Resumption of Elective Surgical Care

- A. Appropriate Checklist for Planned Surgical Activity

The following checklist introduces some of the main criteria that should be taken into account in the initial stages of resuming planned surgery.

No. Criteria for the recovery of planned surgical activity

- 1 **Timing:** **a.** Is there evidence of sustained reduction in the rate of new COVID-19 cases in your trust for a period of time of at least 14-21 days past the peak to ensure necessary staff and associated facilities (e.g. ITU) are available? **b.** Can you ensure that elective surgery will not adversely impact on the capacity to meet demand for emergency services?
 - 2 **PPE:** Do you have adequate PPE and surgical supplies appropriate to the number and type of procedures performed on site, and clear policies on how and when to use them?
 - 3 **Interdependent services:** Is there sufficient availability of core interdependent services, such as diagnostic imaging, anaesthesia, critical care, pathology and sterile processing?
 - 4 **COVID-19 Testing:** Is local testing available and are appropriate policies developed to address testing requirements and frequency for both staff and patients?
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No. Criteria for the recovery of planned surgical activity

- 5 Data:** Are there high-quality local data on deferred surgery and pre-existing waiting lists to enable an accurate assessment of the surgical workload by specialty?
 - 6 COVID negative facilities:** Has a dedicated minimal risk environment been created that includes ward areas, operating and anaesthetic rooms with recovery facilities, and where relevant, rehabilitation facilities such as physiotherapy?
 - 7 Surgical workforce:**
 - a.** Are there sufficient numbers of staff available to carry out routine work while maintaining emergency services, taking into account any time off that staff may need to take due to illness, fatigue or self-isolation?
 - b.** Is there an agreed schedule for revision of job plans to reflect the increased proportion of time spent in the operating room?
 - 8 Local coordination:** Have agreements between local trusts been considered to ensure resources and care pathways are appropriately managed in a way that promotes equal access to surgery across specialties within your geographic area?
 - 9 Local coordination:** Have agreements between local trusts been considered to ensure resources and care pathways are appropriately managed in a way that promotes equal access to surgery across specialties within your geographic area?
 - 10 Recovery management team:** Is there a local recovery management team in place (with multi-professional and multi-disciplinary clinical input), to provide coordination and oversight of relevant policies and communications?
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B. Safety Considerations & Risk Assessment

Safety of patients and surgical teams is paramount when undertaking elective surgery in the initial recovery phase from COVID-19. This tool lists key considerations to minimize risks of patients and surgical teams contracting COVID-19 in the hospital.

No. Steps

1 Infection Prevention:

- a) Frequent hand washing and social distancing within the hospital when not in the operating theatre;
- b) Isolation precautions for patients who are suspected of COVID-19, including creating COVID negative wards or otherwise preventing contact with other patients or staff;
- c) Local infection control policies should be set up and appropriate training provided to all staff.

2 Preoperative Testing & Initial Assessment:

- a) COVID-19 should be sought in all patients either directly via testing or through proxy indicators. The following factors can increase the level of confidence about the patient's status:
 - A period of at least 14 days' isolation prior to surgery;
 - No symptoms suggestive of COVID-19;
 - No recent contact (within 14 days) with confirmed COVID positive patient;
 - Recent negative COVID antigen (swab) test, performed as close to surgery as practically possible;
 - Prevalence of COVID-19 in the hospital's patient population (some cities may have higher prevalence of COVID positive patients).
- b) As all tests have false negative rates, a single negative test is not proof that the patient is COVID-19 free. When in doubt, it is recommended that all patients should be considered as potential COVID positive.
- c) Surgeons should consider alternative treatments to non-emergency surgery in COVID positive patients.
- d) Patients' comorbidities should be taken into account when evaluating the risk of surgery, and where relevant, patients' health should be optimized (e.g. in diabetic patients) to reduce the possibility of complications.

3 Personal Protective Equipment (PPE):

- a) If the level of confidence in the patient's COVID-19 status is low surgeons should wear full PPE (disposable gloves, fluid repellent gown, eye/face protection and FFP2/3 mask).
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No. Steps

- b) Full PPE should be worn particularly when carrying out aerosol generating procedures, including laparoscopic surgery.
- c) It is imperative for the team to familiarize themselves with sterile donning and doffing of PPE.

4 Postoperative Considerations:

- a) Appropriate infection prevention and control measures should also be taken in recovery facilities to ensure patients are not released to environments that may be high-risk from COVID-19.
 - b) If a surgical patient converts to COVID-19 after surgery, arrangements should be in place for quick transfer to hospitals or facilities equipped to manage COVID-19 patients.
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C. Developing cohesive leadership and process of frequent communication

1) Local recovery management team:

- a) A local governance team should be put together to coordinate the recovery and provide transparent and flexible oversight. This should include the oversight and clarification of policies and guidance, making real-time governance decisions, managing the whole care pathway, communicating key messages to staff and patients, and liaising with other hospitals and related specialties as needed.
- 2) The team should have clinical input and be **multidisciplinary and multiprofessional** with **daily meetings** to deal with rapidly evolving local and national issues.
- 3) **Decisions** should consider prioritization of patients, policies around referrals, COVID assessment and relevant protection, in the context of local availability of resources.
- 4) **Wider use of virtual meetings** should be made for staff and team communications as well as for consultations and communications with patients.

D. Assessing surgical workload and patient population

- 1) **Record of deferred cases:** It is essential that hospitals keep a clear record of all

surgery that is being deferred and the criteria used to do so, so that there is an accurate estimate of deferred surgery and current waiting lists. Numbers of patients should include those who are:

- a) Waiting for elective surgery;
- b) On stalled care pathways;
- c) New patients.

- 2) **Patient population data** should also be taken into account to assess population needs and potentially larger local community backlogs against available capacity.
- 3) **Patient prioritization:** There should be clear prioritization protocols that reflect local and national needs, alongside availability of local resources.

E. Ensuring adequate hospital capacity and facilities

- 1) Hospitals from the independent sector will continue to support COVID dedicated hospitals in the short term during the recovery period.
- 2) Hospitals can also consider what ongoing needs they may have beyond this period where they can draw upon independent sector capacity.
- 3) Scheduling modifications to increase hospital capacity, including extending hours of elective surgery later into the evening and on the weekends should be considered.
- 4) Revising clinicians' job plans to allow more direct patient care while reducing administrative workload.
- 5) Additional time in theatre should be taken into account, due to the increased time necessitated by managing COVID-19 related risks. This is particularly the case in lists with multiple procedures.

F. Enhancing workforce capacity

- 1) Temporary expansion of the workforce will be necessary and important to manage an unstable workforce related to fatigue, illness or social issues.
- 2) Temporary retention of additional surgeons, nurses and other healthcare workers who have returned to work should be retained for

the time period necessary to manage the backlog of work.

- 3) Reassigning surgeons, junior doctors and surgical care team staff, based on their competencies, to work in outpatient and inpatient units, emergency and/or casualty departments.
- 4) Revising existing job plans, to ensure surgeons are able to spend more time in the operating theatre treating patients and delegate non-direct surgical care to other staff.
- 5) Appropriate cross-trust indemnity will need to be in place to facilitate flexible working.

G. Reconfiguring services

- 1) Where possible, there should be a physical separation of COVID-19 positive and COVID-19 negative patients. COVID-19 free sites might be created at independent hospitals, within designated areas.
- 2) Where COVID-19 light facilities cannot be created, dedicated COVID-19 operating theatres should exist to help contain the spread of the disease which should be out of high traffic areas and emptied of non-essential materials or personal items with clearly demarcated area available for donning and offing of PPE and exchange of equipment, medications and materials.
- 3) For COVID-19 positive patients who require acute surgery, consideration should be given to surgical approaches that decrease operating staff exposure and shorten the duration of surgery.
- 4) A wider use of virtual clinics as well as virtual patient reviews and consultations is encouraged where appropriate.
- 5) Triage, referrals and service reconfigurations between trusts and at a regional or national level should be considered to deliver surgical care efficiently.

H. Supporting the surgical workforce

- 1) Secure adequate PPE to protect both patients and members of the surgical team.
- 2) Ensure adequate testing and appropriate frequency of testing is available.

- 3) Continued adherence to universal precautions such as handwashing, social distancing.
- 4) Consider levels of stress and fatigue in otherwise healthy workers as they are at more risk for physical and emotional exhaustion.
- 5) Training should be made available on new ways of delivering healthcare, including virtual clinics.

I. Patient communication

- 1) Sharing plans to accelerate elective treatment with the public and reassure the public that their conditions will be treated;
- 2) Sharing procedure prioritization criteria;
- 3) Having a standardized information sheet with a clear explanation of safety risks for patients receiving care in hospitals during COVID-19;
- 4) Visitor guidelines;
- 5) Post-Discharge care/follow up, pre-discharge testing in patients with vulnerable family/cohabitants;
- 6) Advance directives;
- 7) Carrying out virtual consultations;
- 8) Guidelines for when to visit the hospital, when to go to the A&E, when they can consult remotely, and when they should access online/local pharmacy support (e.g. for minor injuries) and help themselves out without needing further input.

J. Supporting training

- 1) A robust plan should be in place to support the next generation of surgeons.
- 2) Delivery of surgical training needs to be matched to the need for increased surgical activity.
- 3) In the recovery phase, decisions surrounding progression should be flexible to ensure individual trainees progress through the programme at an appropriate pace in line with the change to a competency-based curriculum.
- 4) Opportunities for simulator training should be identified.

- 5) Training should also be made available on new ways of delivering healthcare, including virtual clinics.
- 6) Support the wider use of online resources.

Policy recommendations

- 1) Consider the diagnosis and risk of COVID-19 in other situations in Emergency General Surgery settings and act and use PPE accordingly. Presentations with intestinal symptoms occur and COVID-19 may present initially as an apparent post-operative complication.
- 2) The speed at which test results can be returned is a crucial factor in enabling more elective surgery to take place safely.
- 3) The aim should be for surgeons to have access to same-day test results, so they can test patients both before and upon admission, and again upon discharge.
- 4) Surgical staff working in COVID dedicated sites should be tested regularly – up to twice a week where practical.
- 5) Surgical teams need access to COVID dedicated sites for their patients, so that people waiting for time-sensitive operations can safely be treated again.
- 6) A quarter of surgical teams depend on the independent sector to provide COVID dedicated facilities, so contracts with the independent sector need to be extended and include opportunities for surgical trainees to progress their training.
- 7) A Surgical Review Committee, composed of surgery, anesthesiology, and nursing personnel is essential to provide defined, transparent, and responsive oversight. This committee can lead the development and implementation of guidelines that are fair, transparent, and equitable for the hospital or system in consideration of rapidly evolving local and regional issues.

Conclusion

COVID-19 represents an uncertain challenge that could generate large numbers of patients in a short

period of time. How best to manage this is evolving. There will not be an ideal solution so all are requested to work together to solve the challenge.

Time is of the essence. Please be vigilant and take a leadership role in your practice setting so that these recommendations begin to take hold immediately.

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