



Joint RCOG / BSGE Statement on gynaecological endoscopy during the COVID-19 pandemic

This statement provides a framework for the management of women undergoing emergency and elective laparoscopic or hysteroscopic surgery during the evolving COVID-19 pandemic. The remit of this document does not cover surgical prioritisation, which should be according to local considerations supported by national guidance where available.

Our objectives are:

1. To reduce the risk of person to person (horizontal) transmission of the virus SARS-CoV-2, which causes COVID-19.
2. To optimise patient outcomes
3. To make the best use of limited human and physical resources.

Risk of horizontal transmission of SARS-COV-2 and gynaecological surgery

Aerosols and smoke

- Aerosol generation at intubation and extubation during general anaesthesia (GA) poses the highest risk of disseminating SARS-COV-2.
- SARS-COV-2 is transmitted via the respiratory tract. Thus, viral particles could be spread in the form of air droplets from released CO₂ during laparoscopic surgery or within surgical smoke arising from hysteroscopic, laparoscopic or open surgery. However, in contrast to aerosol generating procedures (AGPs) within the respiratory tract and upper airways, the magnitude of SARS-COV-2 viral transmission risk from airborne particles created by gynaecological surgery is uncertain.
- The risk of generating contaminated aerosols may potentially be lower with laparotomy¹. However, to our knowledge, there is no evidence of an increased risk of COVID-19 transmission during gynaecological laparoscopic surgery when Personal Protective Equipment (PPE) is used, although data specifically evaluating this hazard are lacking.
- Surgical smoke produced during laparoscopic surgery is collected in a confined space and, as long as the smoke is evacuated safely, escape to the theatre environment may be lower compared to open operations. This is because, smoke dissipates into the theatre environment in an uncontrolled manner during open procedures, even when suction devices are used.
- To the best of our knowledge, there is no evidence that operative hysteroscopy procedures (for example but not limited to the use of electrosurgery or tissue removal systems) carries an increased risk of transmission of SARS-CoV-2 through contamination or the generation of aerosols.



Body tissue and fluids

Human-to-human transmission of SARS-CoV-2 via direct contact, fomites and faeces is recognised^{2,3}.

- *Faeces* –SARS-COV-2 viral RNA has been found in faeces in 29%-67% of COVID-19 cases^{4,5}. However, infectious live SARS-CoV-2 viral particles have been detected in faeces in a much smaller proportion of cases, estimated to be of the order of 1-2%⁴. Thus, whilst it appears that SARS-CoV-2 can be transmitted by the faecal route, the low prevalence of live viral particles within faeces suggests the potential transmission risk during surgery is low.
- *Blood* - SARS-COV-2 RNA has been detected in the blood of most (97%) COVID-19 cases⁶ but the viral RNA load is low⁷ implying a low risk of transmission of infection from exposure to blood within escaping CO₂ aerosols or smoke.
- *Genital secretions and urine* – The virus has not been identified in the genital tract⁸ or urine⁵ of women with COVID-19. This observation is further supported by reports showing no evidence of vertical transmission (transfer from mother to baby antenatally or intrapartum) in women suffering from COVID-19⁹⁻¹³. Therefore, the risk of SARS-COV-2 dissemination from these body fluids appears to be insignificant.

COVID-19 and surgical outcomes

Clinical outcomes appear to be worse in asymptomatic patients with undetected COVID-19 undergoing surgery¹⁴. Specifically, the development of Adult Respiratory Distress Syndrome (ARDS) and need for ventilatory support, ITU admissions and overall mortality are higher. Surgery itself during the incubation period may worsen or accelerate subsequent disease progression. However, these risks may be proportional to age, surgical complexity and patient co-morbidities.

Mitigation of risks associated with COVID-19

- *Testing*
 - Currently available RT-PCR antigen tests for SARS-COV-2 are very good for detecting COVID-19, but of limited accuracy for excluding COVID-19. It is estimated that between 20 and 50% of tests may be false negatives^{15,16}. Hence a single negative test does not rule out the infection.
 - Imaging of the chest using X-ray or computerised tomography (CT) may not enhance detection rates in asymptomatic patients and so such testing is likely to be of limited value. CT chest in combination with RT-PCR may be considered for women where there is a high risk for requiring critical care following surgery.
- *Theatre environment*
 - Most standard operating theatres have a positive pressure environment relative to the surrounding air (e.g. in corridors and adjacent areas) to prevent the flow of air from less sterile areas into a more sterile one. However, this positive pressure environment may potentially enhance the spread of aerosols if connecting doors are opened, posing an increased airborne viral transmission risk.



- A negative pressure environment is ideal to reduce dissemination of virus and bacteria beyond the operating theatre, but such facilities are not widely available.
- A higher frequency of filtered air exchanges may help reduce viral load within an operating theatre¹⁷. Standard positive pressure theatres typically allow 15-25 air changes per hour whereas air may be changed more than 300 times per hour in operating theatres with laminar flow facilities.
- The risk of horizontal transmission of SARS-COV-2 to health care staff can be reduced by ensuring only essential theatre personnel are present.
- *Personal protective equipment (PPE)*
 - Water repellent, long sleeved surgical gowns, eye and face protection, gloves and filtering face piece class 3 (FFP3) respirators are recommended to be worn by medical and theatre personnel, during surgical procedures conducted under general anaesthesia, to reduce SARS-COV-2 transmission risks¹⁸.
- *Surgical technique*
 - The surgical approach should aim to minimise the risk of viral spread from generation of air droplets or smoke, and from body fluid contamination, during open, laparoscopic or hysteroscopic surgery.
 - Laparoscopic surgery is associated with reduced morbidity, shorter hospital stay and quicker return to daily activities^{19,20}, all of which will benefit the patient, and make better use of hospital resources, particularly at the time of the current pandemic.
- *Anaesthetic*
 - Hysteroscopic surgery can be conducted in an outpatient setting in conscious women with or without local anaesthetic. The risk of exposure to SARS-CoV-2 may be reduced by avoiding the need for hospital admission.
 - In an operating theatre setting, hysteroscopic surgery can be conducted under conscious sedation or regional anaesthesia, avoiding aerosol generating GA.
 - Open surgery may also be conducted under regional anaesthesia. However, the decision for open surgery under regional anaesthesia, as opposed to laparoscopic surgery under general anaesthesia, should take into account the possibility of GA conversion, with potentially higher risks of horizontal transmission from peri-operative intubation, if regional anaesthesia is inadequate or indicated due to unanticipated operative complexity.

Recommendations

General considerations

- Non-surgical methods of treatment should be considered in preference to surgery, to reduce the risk of COVID-19 transmission to health care workers and patients, and reduce the need for hospital admission, provided they are a safe and effective alternative.
- Establishing COVID-19 status in *elective* surgical cases will allow surgery to be deferred in affected patients which will (i) minimise the risk of horizontal viral transmission and (ii) prevent complications arising from unrecognised SARS-COV-2 infection.



- Establishing COVID-19 status in *urgent and emergency* surgical cases will help determine hospital isolation practices, guide the use of PPE and inform clinical care allowing cohorts of patients to be managed according to appropriate clinical pathways.
- Infection control practices, including the use of PPE, for surgical procedures in an outpatient setting or operating theatre setting under regional or general anaesthesia, should comply with local and national protocols.
- If a patient develops a post-operative fever within 30 days of surgery, arrangements need to be made for remote or face to face clinical review. SARS-CoV-2 testing / re-testing should be undertaken where there is no other clear explanation for the pyrexia.
- Care pathways should be implemented with the aim of reducing hospital acquired SARS-CoV-2 infection for women, visitors and for staff.

Elective day-case or inpatient surgery

- Women and her household contacts should be advised about the need and duration of self-isolation prior to admission according to current national guidance (which currently recommends 14 days of self-quarantine²¹) and local protocols.
- Pre-admission hospital attendances, or community based assessments, should be kept to a minimum. Pre-operative assessment and investigations including bloods tests, MRSA screening and COVID-19 swabs should be undertaken during a single visit where possible.
- Elective patients scheduled for surgery should undergo SARS-CoV-2 virology screening, using standard oropharyngeal and nasal swabs, in keeping with national and local directives. Tests should be done 6 to 72 hours prior to surgery, in accordance with local test result turnaround times. Following testing, all patients should be instructed to self-quarantine at home until surgical admission to hospital or be admitted to hospital and isolated in accordance with local hospital resources and policies.
- Patients testing positive for SARS-CoV-2 should have surgery deferred for at least 14 days from the onset of symptoms and only when asymptomatic to avoid horizontal transmission. Advice should be given regarding self-isolation at home for the patient and any household members. Arrangements should be made for re-testing (viral clearance) in line with local policies.
- Patients testing negative for SARS-CoV-2 but with positive screening questions at the time of testing, or subsequently on the day of admission for surgery, should be considered a suspected COVID-19 case. Advice should be given regarding self-isolation at home. Surgery should be deferred for 14 days and re-testing undertaken in line with local policies.
- Patients testing negative for SARS-CoV-2 but with a temperature $\geq 37.3^{\circ}\text{C}$ on the day of admission for surgery that is not attributable to the gynaecological condition necessitating surgery, should be considered a suspected COVID-19 case. Advice should be given regarding self-isolation at home. Surgery should be deferred for 14 days and re-testing undertaken in line with local policies.



- Patients awaiting surgery who are contacted by NHS “test and trace” as a confirmed contact should self-isolate in accordance with the guidance given, usually a 14-day period of self-isolation from the day they were last in contact with the affected person. Patients should be told to inform the hospital so that surgery can be rescheduled, relevant self-isolation advice given and further pre-operative viral testing arranged.

Emergency and urgent surgery

- Pre-operative SARS-COV-2 testing should be undertaken prior to emergency / urgent surgery because knowledge of the COVID 19 status will allow cohorting of women into appropriate care pathways, and in those women that test positive trigger contact tracing of at risk staff and patients as well as inform advice for household members about self-isolation. However, the procedure should not be delayed to obtain the test result unless it is safe to do so and deferment does not compromise patient care. Patients who screen positive on questioning or have an unexplained pyrexia should be considered and managed as a suspected COVID-19 case.
- In confirmed or suspected COVID-19 cases:
 - Emergency laparoscopic procedures should be undertaken by the most proficient surgeon available to ensure full knowledge of safe laparoscopic procedures are followed and that the procedure is performed in the shortest time possible.
 - Emergency open or intrauterine / lower genital tract procedures should be undertaken using regional or local anaesthesia where feasible and if acceptable to the patient.

Elective outpatient surgery

- Patients attending for outpatient hysteroscopic procedures who screen positive on clinical screening (conducted according to local policies), should be considered a suspected COVID-19 case and undergo SARS-CoV-2 virology screening. Surgery should be deferred for 14 days and re-testing undertaken in line with local policies.

Endoscopic surgery

Hysteroscopic surgery

- Best practice should be followed for diagnostic and operative hysteroscopy procedures to minimise the risk of:
 - Complications requiring further health care interventions.
 - General contamination from blood, urine, genital tract fluids and faeces.
 - Generating surgical smoke by using mechanical instruments or tissue removal systems, if a safe and effective alternative. Where electrosurgery is used, facilitate the extraction of surgical smoke by using active suction connected to the outflow in a closed circuit.
- Whilst all women should be offered a choice of anaesthesia and treatment settings for hysteroscopic procedures, they should be aware that an outpatient setting avoids hospital admission, thereby minimising the risk of exposure to SARS-CoV-2. Where an inpatient procedure is to be undertaken, consider the use of conscious sedation and regional anaesthesia rather than general anaesthesia to prevent the generation of aerosols.



Laparoscopic surgery

- Laparoscopic surgery should be selected in keeping with usual, best practice.
- The port positioning and instrument choice for gynaecological laparoscopic operations should be according to the surgeon and hospitals usual practice to minimise time in theatre and the risk of operative complications.
- Suction devices, smoke evacuation filters, retrieval devices and swabs should be used to:
 - prevent aerosol transmission: remove smoke, aerosol and the CO₂ pneumoperitoneum during operations
 - prevent potential droplet transmission: avoid explosive dispersion of body fluids when removing trocars and retrieving specimens
- There is a high risk of explosive dispersion of body fluid when the uterus is removed from the vagina at total laparoscopic hysterectomy. Swabs, suction and retrieval devices should be used to minimise droplet transmission and consideration should be given to performing an open hysterectomy, on a case by case basis.
- Only evacuate surgical smoke via the tap on ports when attached to a smoke evacuation filter and by direct suction using a vacuum suction unit.
- Only evacuate the pneumoperitoneum via direct suction using a vacuum suction unit.

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This statement has been produced rapidly to meet a need without undergoing the usual level of peer review scrutiny due to the current emergency. It does not form a directive but should be used by individual health care practitioners to inform their practice.