

# RECOMMENDATIONS REGARDING SURGICAL RESPONSE TO COVID-19 CRISIS

March 29, 2020 by [Aurora Pryor](https://www.sages.org/author/aurora-pryor/) (<https://www.sages.org/author/aurora-pryor/>)

Released 3/30/2020

Note: these recommendations are subject to change and update.

SAGES and [EAES](https://eaes.eu) (<https://eaes.eu>) are committed to the protection and care of patients, their surgeons and staff, and all who are served by the medical community at large. We are making these recommendations based on best available evidence and expert opinion from the global surgical community. We will continue to monitor emerging evidence and support novel research to address these issues.

COVID-19 has demonstrated a propensity to spread at an exponential rate in several countries, significantly impacting many lives and affecting our practice as healthcare professionals. Through this prism, the following recommendations are being made with the aim that they can be of support to you, by addressing a number of uncertainties regarding our practice, own safety, and overall patient care.

## **Rationing of Services:**

1. **All elective surgical and endoscopic cases should be postponed at the current time.** These decisions however should be made locally, based on COVID-19 burden and in the context of medical, logistical and organizational considerations. There are different levels of urgency related to patient needs, and judgment is required to discern between them. However, as the numbers of COVID-19 patients requiring care is expected to escalate over the next few weeks, the surgical care of patients should be limited to those whose needs are imminently life threatening. These may include patients with malignancy that could progress, or with active symptoms that require urgent care. All others should be delayed until after the peak of the pandemic is seen. This minimizes the risk to both, patient and health care team, as well as minimizes utilization of necessary resources, such as beds, ventilators, and personal protective equipment (PPE).
2. **All non-essential hospital or office staff should be allowed to stay home and telework.** All in-person educational sessions should be cancelled and could be replaced by online resources (<https://www.sages.org/telehealth-primer-covid-19-pandemic/>). The minimum number of necessary providers should attend patients during rounds and other encounters. Adherence to hand washing, antiseptic foaming, and appropriate use of PPE should be strictly enforced. When necessary, in-person surgical consultation should be performed by decision makers only.
3. **All non-urgent in-person clinic/office visits should be cancelled or postponed, unless needed to triage active symptoms or manage wound care.** All patient visits should be handled remotely when possible, and in person only when absolutely necessary. Access to clinics should be maintained for those special circumstances to avoid patients seeking care in the ED. Only a minimum of required support personnel should be present for these visits, and PPE should again be

appropriately utilized. When in critical need, consideration should be given to redeploying OR resources for intensive care needs.

4. **Multidisciplinary team (MDT) meetings should be held virtually as possible** and/or limited to core team members only, including surgeon, pathologist, Clinical Nurse Specialist, radiologist, oncologist and coordinator. The MDT is responsible for the decision making and classifying the patient's priority level of need for surgery.

## Procedural Considerations:

1. There is very little evidence regarding the relative risks of Minimally Invasive Surgery (MIS) versus the conventional open approach, specific to COVID-19. <sup>(1)</sup> We will therefore continue to monitor emerging evidence and support novel research to address these issues.
2. It is strongly recommended however, that consideration be given to the possibility of viral contamination to staff during surgery either open, laparoscopic or robotic and that protective measures are strictly employed for OR staff safety and to maintain a functioning workforce.
3. Although previous research has shown that laparoscopy can lead to aerosolization of blood borne viruses, <sup>(2-4)</sup> there is no evidence to indicate that this effect is seen with COVID-19, nor that it would be isolated to MIS procedures. Nevertheless, erring on the side of safety would warrant treating the coronavirus as exhibiting similar aerosolization properties. For MIS procedures, use of devices to filter released CO2 for aerosolized particles should be strongly considered. (<https://www.sages.org/resources-smoke-gas-evacuation-during-open-laparoscopic-endoscopic-procedures/>)
4. Proven benefits of MIS of reduced length of stay and complications should be strongly considered in these patients, in addition to the potential for ultrafiltration of the majority or all aerosolized particles.

Filtration of aerosolized particles may be more difficult during open surgery.

5. There may be enhanced risk of viral exposure to proceduralists/ endoscopists from endoscopy and airway procedures. When these procedures are necessary, strict use of PPE should be considered for the whole team, following Centers for Disease Control (CDC, <https://www.cdc.gov>) or WHO (<https://www.who.int>) guidelines for droplet or airborne precautions. This likely includes, at a minimum, N95 masks and face shields. <sup>(5, 6)</sup>.

## Practical Measures for Surgery:

1. Consent discussion with patients must cover the risk of COVID-19 exposure and the potential consequences.
2. If readily available and practical, surgical patients should be tested pre-operatively for COVID-19.
3. If needed and possible, intubation and extubation should take place within a negative pressure room. (<https://www.asahq.org/in-the-spotlight/coronavirus-covid-19-information>), <https://icmanaesthesiacovid-19.org> (<https://icmanaesthesiacovid-19.org>) <sup>(7, 8)</sup>
4. Operating rooms for presumed, suspected or confirmed COVID-19 positive patients should be appropriately filtered and ventilated and if possible, should be different than rooms used for other emergent surgical patients. Negative pressure rooms should be considered, if available.
5. Only those considered essential staff should be participating in the surgical case and unless there is an emergency, there should be no

exchange of room staff.

6. All members of the OR staff should use PPE as recommended by national or international organization including the WHO or CDC. Appropriate gowns and face shields should be utilized. **These measures should be used in all surgical procedures during the pandemic regardless of known or suspected COVID status.** Placement and Removal of PPE in should be done according to CDC guidelines (<https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf>).
7. Electrosurgery units should be set to the lowest possible settings for the desired effect. Use of monopolar electrosurgery, ultrasonic dissectors, and advanced bipolar devices should be minimized, as these can lead to particle aerosolization. <sup>(9-15)</sup> If available, monopolar diathermy pencils with attached smoke evacuators should be used.
8. Surgical equipment used during procedures with COVID-19 positive or Persons Under Investigation (PUI) /suspected COVID patients should be cleaned separately from other surgical equipment.

## Practical Measures for Laparoscopy

1. Incisions for ports should be as small as possible to allow for the passage of ports but not allow for leakage around ports.
2. CO<sub>2</sub> insufflation pressure should be kept to a minimum and an ultra-filtration (smoke evacuation system or filtration) should be used (<https://www.sages.org/resources-smoke-gas-evacuation-during-open-laparoscopic-endoscopic-procedures/>), if available.
3. All pneumoperitoneum should be safely evacuated via a filtration system before closure, trocar removal, specimen extraction or conversion to open.

# Practical Measures for Endoscopy

(<https://www.asge.org/home/joint-gi-society-message-covid-19>

(<https://www.asge.org/home/joint-gi-society-message-covid-19>), (<https://www.bsg.org.uk>)

(<https://www.bsg.org.uk>)(16, 17)

1. The ability to control aerosolized virus during endoscopic procedures is lacking, so all members in the endoscopy suite or operating room should wear appropriate PPE, including gowns and face shields. Placement and Removal of PPE should be done according to CDC guidelines. (<https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf>)
2. Since patients can present with gastrointestinal manifestations of COVID-19, all emergent endoscopic procedures performed in the current environment should be considered as high risk.
3. Since the virus has been found in multiple cells in the gastrointestinal tract and all fluids including saliva, enteric contents, stool and blood, surgical energy should be minimized. <sup>(16, 17)</sup>
4. Endoscopic procedures that require additional insufflation of CO<sub>2</sub> or room air by additional sources should be avoided until we have better knowledge about the aerosolization properties of the virus. This would include many of the endoscopic mucosal resection (EMR) and endoluminal procedures.
5. Removal of caps on endoscopes could release fluid and/or air and should be avoided.
6. Endoscopic equipment used during procedures with COVID-19 positive or PUI patients should be cleaned separately from other endoscopic equipment.

# REFERENCES:

1. Minimally invasive surgery and the novel coronavirus outbreak: lessons learned from Italy. Zheng MH, Boni L, Fingerhut A. *Annals of Surgery*. 2020. [Accepted for Publication].
2. Surgical smoke and infection control. Alp E, Bijl D, Bleichrodt RP, Hansson B, Voss A. *J Hosp Infect*. 2006 Jan;62(1):1-5. Epub 2005 Jul 5.
3. Detecting hepatitis B virus in surgical smoke emitted during laparoscopic surgery. Kwak HD, Kim SH, Seo YS, et al. *Occup Environ Med*. 2016, 73:857--863.
4. Surgical smoke may be a biohazard to surgeons performing laparoscopic surgery. Choi SH, Kwon TG, Chung SK, Kim TH. *Surg Endosc*. 2014, 28 (8): 2374-80.
5. Coronavirus (COVID-19) outbreak: what the department of endoscopy should know. Repici A, Maselli R, Colombo M, Gabbiadini R, Spadaccini M, Anderloni A, Carrara S, Fugazza A, Di Leo M, Galtieri PA, Pellegatta G, Ferrara EC, Azzolini E, Lagioia M. *Gastrointest Endosc*. 2020 Mar 13. pii: S0016-5107(20)30245-5. doi: 10.1016/j.gie.2020.03.019. [Epub ahead of print]
6. Perioperative Considerations for the 2019 Novel Coronavirus (COVID-19).
7. Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019-nCoV) patients. Wax RS, Christian MD. *Can J Anaesth*. 2020 Feb 12 [Epub ahead of print].
8. Liana Zucco, Nadav Levy, Desire Ketchandji, Mike Aziz, Satya Krishna Ramachandran, Anesthesia Patient Safety Foundation, <https://www.apsf.org/news-updates/perioperative-considerations-for-the-2019-novel-coronavirus-covid-19/>, 2020 Feb 12.
9. Surgical Smoke and the Orthopedic Implications. *The Internet Journal of Orthopedic Surgery*. Parsa RS, Dirig NF, Eck IN, Payne III WK. 2015, Volume 24 Number 1.

10. Risk of acquiring human papilloma-virus from the plume produced by the carbon dioxide laser in the treatment of warts. Gloster HM Jr, Roenigk RK. *J Am Acad Dermatol*. 1995, 32:436-41.
  11. Papillomavirus in the vapor of carbon dioxide laser-treated verrucae. Garden JM, O'Banion MK, Shelnitz LS, et al. *JAMA*. 1988, 259:1199--1202.
  12. Human papillomavirus DNA in CO2 laser-generated plume of smoke and its consequences to the surgeon. Ferenczy A, Bergeron C, Richart RM. *Obstet Gynecol*. 1990, 75:114-118.
  13. Presence of human immunodeficiency virus DNA in laser smoke. Baggish MS, Poiesz BJ, Joret D, Williamson P, Refai A. *Lasers Surg Med*. 1991;11:197-203 .
  14. Experimental study of the potential hazards of surgical smoke from powered instruments. In SM, Park DY, Sohn IK, et al. *Br J Surg*. 2015, 102:1581--1586.
  15. Studies on the transmission of viral disease via the CO2 laser plume and ejecta. Wisniewski PM, Warhol MJ, Rando RF, Sedlacek TV, Kemp JE, Fisher JC. *J Reprod Med*. 1990, 35:1117-23.
  16. COVID-19: Gastrointestinal manifestations and potential fecal-oral transmission. Gu J, Han B, Wang J. *Gastroenterology*. March 3 2020 [Epub ahead of print].
  17. ASGE | JOINT GI SOCIETY MESSAGE- COVID-19 Clinical insights for our community of gastroenterologists and gastroenterology care providers. <https://www.asge.org/home/joint-gi-society-message-covid-19>  
(<https://www.asge.org/home/joint-gi-society-message-covid-19>)
-




## Did you find this information helpful?


Please consider [joining SAGES](https://www.sages.org/membership/) or [making a donation to the SAGES Education and Research Foundation](https://www.sagesfoundation.org/donate/) so we can continue to bring content like this to the surgical community for free.


### Share this:


 Twitter (<https://www.sages.org/recommendations-surgical-response-covid-19/?share=twitter&nb=1&nb=1>)

 Facebook (<https://www.sages.org/recommendations-surgical-response-covid-19/?share=facebook&nb=1&nb=1>)

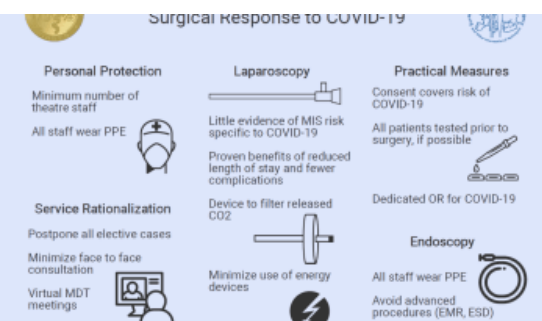
 LinkedIn (<https://www.sages.org/recommendations-surgical-response-covid-19/?share=linkedin&nb=1&nb=1>)

 Pinterest (<https://www.sages.org/recommendations-surgical-response-covid-19/?share=pinterest&nb=1&nb=1>)

 WhatsApp (<https://www.sages.org/recommendations-surgical-response-covid-19/?share=jetpack-whatsapp&nb=1&nb=1>)

 Reddit (<https://www.sages.org/recommendations-surgical-response-covid-19/?share=reddit&nb=1&nb=1>)

### Related



[https://www.sages.org/notes-from-the-battlefield-](https://www.sages.org/notes-from-the-battlefield-march-30-2020/)

[march-30-2020/](https://www.sages.org/notes-from-the-battlefield-march-30-2020/)

Notes From the Battlefield March 30, 2020

<https://www.sages.org/notes-from-the-battlefield-march-30-2020/>

[https://www.sages.org/recommendations-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[smoke-gas-evacuation-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[during-open-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[laparoscopic-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[endoscopic-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[procedures/](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[https://www.sages.org/](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[to-sages-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[recommendations-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[regarding-surgical-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[response-to-covid-19-](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)

[crisis/](https://www.sages.org/recommendations-regarding-surgical-response-to-covid-19-crisis/)



[\(https://www.sages.org/publications/guidelines/\)](https://www.sages.org/publications/guidelines/)

**SAGES Manuals**

[\(https://www.sages.org/publications/sages-manuals/\)](https://www.sages.org/publications/sages-manuals/)

[TATME STUDY INFO](#)

[FOUNDATION](#)

[SAGES.TV](#)

[MYCME](#)

[EDUCATIONAL ACTIVITIES](#)



[LOG IN](#)

[LEGAL](#)

[MANAGED BY BSC MANAGEMENT, INC.](#)