



IPSO COVID-19 STATEMENT

by

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Recommendations for childhood cancer surgery need to be tailored according to the COVID-19 prevalence and health system capacity. The goals of care during the pandemic are to provide childhood cancer surgical care in a timely manner while optimizing available resources and limiting exposure in patients and health workers. Children often have curable cancers, with surgery being integral to this, however some modifications in the timing and practice of surgery may be required to provide safe treatment without compromising oncological prognosis.

The risk of SARS-CoV2 transmission is highest when intervening in the airway or respiratory system due to dense viral load aerosolization¹. This may occur during endotracheal intubation, bronchoscopy or thoracic surgery procedures. Staffing should be minimized to essential personnel. Exposed team members are required to adhere to consensus guidelines, use airborne precaution Personal Protective Equipment (PPE) and care for patients with suspected or confirmed COVID-19 cases in designated operative and perioperative area²⁻⁴. The risk of transmission of infection during tumour surgery outside of the airway or chest would be considered low with adequate droplet precautions. There is little evidence to suggest that a minimally invasive approach is associated with increased intraoperative exposure or poses a higher risk of SARS-CoV2 transmission^{5,6}, but extra care should be taken in regards smoke and gas evacuation if the surgeon chooses minimal invasive access.

During this evolving pandemic, surgery scheduling and prioritization is a shared decision involving cancer care team and hospital leadership. Delays in the optimal timing of local control may be considered with extensions of chemotherapy where significant intraoperative blood loss is anticipated, post-operative critical care is needed, patient infection with SARS-CoV2 or hospital resources would not enable an optimal surgical outcome. Elective procedures and surgery for benign or low-grade tumours with low metastatic risk should be delayed and reviewed within a planned timeframe.

Table below summarises IPSO recommendations for general service provision and surgical intervention in children with cancer during the COVID-19 pandemic.

GUIDANCE FOR THE PROVISION OF SURGICAL SERVICES DURING COVID-19 PANDEMIC

SERVICE	GUIDANCE AND RECOMMENDATIONS	REF
SPECIAL SURGICAL CONSIDERATIONS FOR COVID 19 PATIENTS	<ol style="list-style-type: none"> 1. Patients with COVID-19 may present more unwell 2. COVID-19 may present with abdominal pain, mesenteric adenitis or diarrhoea leading to delayed diagnosis of acute abdomen/peritonitis 3. Delayed presentation to hospital surgical services with acute surgical problems (acute abdomen) may be delayed due social isolation, hospital capacity issues or family reluctance to present acutely to hospital 	
CLINICAL SERVICE PRIORITIES	<ol style="list-style-type: none"> 1. Non-urgent in-person clinic/office visits should be minimized, postponed, or offered via tele/videoconferencing when available 2. Only one person stays with the child throughout the period needed for treatment – as per institutional policy 3. Review frequency of catheter flushing to q3 monthly 	7
PRE- AND PERI-OPERATIVE MANAGEMENT	<ol style="list-style-type: none"> 1. If readily available and practical, surgical patients should be tested pre-operatively for COVID-19 for staff safety, intraoperative and postoperative care and possible complications. 2. If testing is not available, consider the patient COVID-19 positive for the procedure. 3. Anaesthesia for cross sectional imaging (CT/MRI) should avoid intubation, if possible. 4. Performing aerosol-generating procedures in negative pressure rooms, if available. 	
GENERAL OPERATIVE GUIDANCE	<ol style="list-style-type: none"> 1. Airborne precaution PPE including whether a PAPR or P2 / N95 mask and face shield with impervious gown 2. Performing endotracheal intubation on patients with COVID-19 or suspected COVID-19 we suggest using video-guided laryngoscopy, over direct laryngoscopy, if available; (low quality evidence). 3. Designated COVID-19 operating rooms, if feasible 4. Only essential staff should be participating in the surgical case with minimal staff change over. 5. Clear briefing as to adequate PPE during the pre-surgical briefing and checking availability prior to surgery as recommended by national or international organizations including the WHO or CDC. 6. Clear donning and doffing areas and procedures as recommended by national or international organizations including the WHO or CDC. 7. If available, monopolar diathermy pencils with attached smoke evacuators should be used. 8. Surgical equipment used during procedures with COVID-19 positive suspected COVID patients should be cleaned separately from other surgical equipment. 	1,2,4

	9. The operating room to remain closed for 30 minutes for air exchange after the patient leaves the room.	
POST OPERATIVE CARE	<ol style="list-style-type: none"> 1. Aerosol-generating procedures should occur in negative pressure rooms with adequate PPE. 2. Post-operative activities considered aerosol-generating include high flow oxygen, CPAP, suctioning and respiratory physiotherapy to clear secretions 	4
MINIMALLY INVASIVE PROCEDURES (MIS)	<ol style="list-style-type: none"> 1. Small incisions for ports to allow for the passage of ports but not allow for leakage around ports. 2. CO2 insufflation pressure kept to a minimum and ultra-filtration (smoke evacuation system or filtration) should be used, if available. 3. Safe evacuation of all pneumoperitoneum via a filtration system before closure, trocar removal, specimen extraction or conversion to open. 	
DISEASE SPECIFIC RECOMMENDATIONS	<ol style="list-style-type: none"> 1. Vascular Access: Vascular access should still be offered where feasible, if not, PICC lines or peripheral IV access may be considered. Removal of vascular access may be delayed where this poses minimal risk to the patient. 2. Surgical biopsy: Avoid any delays for surgical tumour biopsy where indicated, to establish a safe and reliable diagnosis especially if interventional biopsies unavailable. 3. Wilms Tumour: delay nephrectomy or elect for start pre-operative chemotherapy without biopsy if clinical presentation for Wilms; Prolong pre-op chemotherapy up to a maximum 8 weeks for localized tumours and up to 12 weeks for bilateral. 4. Neuroblastoma: Low-risk and resectable tumours; proceed to surgery as clinically indicated; High-risk tumours consider delayed surgical resection with prolonged chemotherapy or consider altered sequence of treatment phases in consultation with oncology team. 5. Hepatoblastoma: Standard of care timing of surgery. Where primary resection is indicated (PRETEXT I/II) and feasible proceed to surgery; If primary surgery not feasible commence stage and PRETEXT specific pre-operative chemotherapy and delayed resection. Prolonged pre-operative chemotherapy is safe if AFP and anatomical response up to 6 cycles. 6. Germ cell tumours: If tumour marker positive, commence pre-operative chemotherapy and delayed surgery. If clinical features and location suggest benign consider postponed surgery unless tumour-related compromise (massive mediastinal or pelvic locations). 7. Lymphoma: Urgent surgery indicated for diagnosis and surgery is urgent for diagnosis and complications. 8. Bone and Soft Tissue Sarcoma: Plan local therapy as per standard of care. Where chemotherapy sensitive and responding to pre-operative chemotherapy safe to delay until surgery safe and possible. For relatively chemotherapy insensitive tumours 	

	<p>(osteosarcoma) and soft tissue sarcomas, proceed to surgery where possible according to standard of care protocol.</p> <p>9. Surgery for palliative care: maintain non-invasive supportive approach, but operate if surgically urgent and clinically indicated.</p>	
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REFERENCES

1. Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J. Aerosol Generating Procedures and Risk of Transmission of Acute Respiratory Infections to Healthcare Workers: A Systematic Review. *Plos One*. 2012;7(4):e35797.
2. Cook TM, El-Boghdadly K, McGuire B, McNarry AF, Patel A, Higgs A. Consensus guidelines for managing the airway in patients with COVID-19. *Anaesthesia*. 2020.
3. Alhazzani W, Møller MH, Arabi YM, et al. Surviving Sepsis Campaign: guidelines on the management of critically ill adults with Coronavirus Disease 2019 (COVID-19). *Intens Care Med*. 2020:1-34.
4. Ong S, Khee TT. Practical considerations in the anaesthetic management of patients during a COVID-19 epidemic. *Anaesthesia*. 2020.
5. Pryor A. SAGES AND EAES RECOMMENDATIONS REGARDING SURGICAL RESPONSE TO COVID-19 CRISIS. 2020; <https://www.sages.org/recommendations-surgical-response-covid-19/>. Accessed 6 April 2020, 2020.
6. Spinelli A, Pellino G. COVID-19 pandemic: perspectives on an unfolding crisis. *Br J Surg*. 2020.
7. Solinas G, Platini F, Trivellato M, Rigo C, Alabiso O, Galetto AS. Port in oncology practice: 3-monthly locking with normal saline for catheter maintenance, a preliminary report. *J Vasc Access*. 2017;18(4):325-327.