

## PSPS Interim Guidelines for Pediatric Surgery During the COVID-19 Pandemic

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### Introduction

Coronavirus disease 2019 (COVID-19) is caused by the novel pathogen Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). It was first recognized in Wuhan, China in December 2019 and it rapidly spread to other countries prompting the World Health Organization (WHO) to declare a global pandemic on March 11, 2020. Severe illness can result to deaths especially in the elderly population and those with comorbidities. However, limited data are available on the clinical manifestations of COVID-19 in the pediatric age group. Initial studies indicate that children are as likely to be infected as adults. However, while they may present as asymptomatic or with mild illness, this has not been proven to lead to less transmission risk.<sup>1</sup> Patients undergoing surgery is also a special population because surgery poses additional risks to the COVID-19 patient as well as to the healthcare team.

The aim of this document is to provide quick guidance in dealing with surgical patients in the pediatric age group. This is an adjunct to the more comprehensive guidelines set forth by Philippine College of Surgeons (PCS). The PSPS continues to monitor developments with regards to this evolving healthcare crisis and updates the recommendations as the need arises. This document is not intended to replace clinical and surgical judgment and protocols adjusted according to the situation of specific institutions.

### Key Principles

1. The goal is to provide appropriate care to children with emergent and urgent surgical

conditions while optimizing limited hospital resources and ensuring safety of all healthcare workers.<sup>2</sup>

2. It is prudent to assume that **all patients are COVID-19 positive unless proven otherwise**. Adequate Personal Protective Equipment (PPE) should be worn at all times when handling patients, especially in the Operating Room (OR).<sup>3</sup>
3. Surgical management must be performed only if delaying the procedure will likely prolong hospital stay, increase the likelihood of hospital re-admission or cause harm to the patient.<sup>2</sup>
4. The decision to resume outpatient clinics and scheduling of elective procedures must be weighed against the readiness of the healthcare staff, the availability of hospital resources and proper PPE, and the preparation of the facility to ensure delivery of safe and quality care.<sup>4</sup>
5. Telemedicine and teleconsultation are highly encouraged for patient and physician interaction if available and applicable to the situation.<sup>2</sup>

### Classification of Cases

(Adapted from the American College of Surgeons, adjusted to Philippine situation)<sup>2</sup>

#### Emergency Cases

Delay in procedure is life threatening.

- Acute intestinal obstruction
  - > Abnormalities of intestinal rotation
  - > Incarcerated/strangulated inguinal hernia
  - > Pyloromyotomy for hypertrophic pyloric stenosis

- > Intussusception reduction not amenable to radiographic reduction
  - > Congenital band
  - > Post-operative adhesion not amenable to non-operative management
  - Intestinal perforation
    - > Necrotizing enterocolitis with perforation
  - Trauma with penetration or uncontrolled hemorrhage
  - Ischemia
    - > Testicular torsion
    - > Ovarian torsion
    - > Limb ischemia from trauma/iatrogenic
  - Most neonatal congenital anomalies
    - > Abdominal wall defect not amenable to non-operative management (gastroschisis, ruptured omphalocele)
    - > Esophageal atresia with trachea-esophageal fistula
    - > Symptomatic congenital diaphragmatic hernia
    - > Intestinal atresia
    - > Intestinal diversion for anorectal anomalies
    - > Cutback anoplasty for low-type imperforate anus
    - > Intestinal diversion for Hirschsprung disease not improved with irrigations
  - Laparotomy for bleeding meckel's diverticulum
  - Polypectomy for bleeding rectal polyp
  - Biliary drainage for choledochal cyst in cholangitis
  - Appendectomy for acute appendicitis (may offer non-operative management but proceed to surgery if it fails)
  - Esophageal or tracheal foreign body ingestion
  - Vascular access (cutdown or percutaneous insertion) if patient has no access at all
  - Tube thoracostomy for pneumothorax/hemothorax
  - Debridement of Fournier's gangrene/necrotizing fasciitis
  - Tenckhoff insertion for patients with Maple Syrup Urine Disease (MSUD) and those in need of emergency peritoneal dialysis
- Most cancer surgery
    - > For solid tumors
      - initial biopsy
      - resection following neoadjuvant chemotherapy
      - consider giving continuing chemotherapy in patients who will require postoperative intensive care or ventilation
  - Portoenterostomy for biliary atresia with jaundice
  - Abscess incision and drainage
  - Resection of diversion for acute exacerbation of inflammatory bowel disease not responsive to medical management.
  - Vascular access device insertion (Consider inserting peripherally inserted central catheters instead)
  - Repair of symptomatic inguinal hernia
  - Cholecystectomy for symptomatic cholelithiasis
  - Excision of choledochal cyst for symptomatic patients (with jaundice, pain)
  - Gastrostomy if required for discharge
  - Circumcision for phimosis/paraphimosis
  - Tenckhoff insertion for peritoneal dialysis for renal failure
  - Fecal disimpaction (if without frank obstruction)

#### *Elective Cases*

Delay in procedure results in minimal patient risk.

- Vascular access device removal (not infected)
- Chest wall reconstruction
- Asymptomatic inguinal hernia (no history of incarceration)
- Anorectal malformation reconstruction following diversion
- Hirschsprung disease reconstruction following diversion
- Hirschsprung disease primary reconstruction responsive to irrigation (with objective parameters)
- Esophageal atresia reconstruction following diversion
- Inflammatory bowel disease reconstruction following diversion

#### *Urgent Cases*

Delay in procedure for days to weeks may be detrimental.

- Enterostomy closure
- Repair of patent omphalomesenteric duct/patent urachus
- Breast lesion excision (benign mass)
- Branchial cleft cyst/ sinus excision
- Thyroglossal duct cyst excision
- Excision of benign soft tissue mass
- Fundoplication
- Orchiopexy
- Splenectomy for hematologic disease
- Cholecystectomy for biliary colic
- Repair of asymptomatic choledochal cyst
- Circumcision
- Removal of Tenckhoff catheter (if not infected)

### Personal Protective Equipment

The Society will uphold the recommendations of the PCS on rational and effective use of PPE.<sup>10</sup>

### COVID-19 Testing (RT-PCR)

Surgery poses additional risks for patients with COVID-19. Initial studies indicate that patients with COVID-19 are at higher risks for perioperative morbidity and mortality, even if they underwent surgery during their incubation period.<sup>6-8</sup> Moreover, aerosol-generating procedures (AGP) also increase the risk for the surgical team to get infected. As such, the following are the recommendations on testing for COVID-19:

All patients shall be screened for risk of having COVID-19 and classified based on the guideline of the Philippine Pediatric Society and Pediatric Infectious Disease Society of the Philippines.<sup>9</sup>

#### *Emergency*

1. All patients for emergency surgery shall be swabbed on admission.
2. The surgery may proceed even without the results of the RT-PCR. The surgical team should be on level 4 PPE.
3. The location where the patient will be admitted postoperatively will depend on the risk classification if the results are not yet available.
4. Results will be made known to the stakeholders as soon as available.

#### *Urgent and Elective*

1. All patients for urgent and elective surgery shall undergo RT-PCR testing.<sup>10</sup> This is ideally done 48 hours prior to procedure. If the result will take longer processing, the surgery shall be done within 3-7 days when the sample has been obtained.
2. The caregiver should be advised to ensure that the patient and the designated caregiver are isolated at home so as to minimize risk of contracting the infection while awaiting result.
3. For urgent and elective surgery, if a patient's test is RT-PCR positive (+), defer the planned surgery and manage the patient's COVID-19 accordingly. If the result is indeterminate, or negative (-) in an asymptomatic patient with a history of contact with confirmed case, or if there is a discrepancy between clinical findings and testing, a CT scan of the chest may be done to detect early and subtle lung changes.<sup>11</sup>
4. Patient's watcher will be screened for risk of having COVID-19 based on the Philippine Society for Microbiology and Infectious Diseases (PSMID) criteria.<sup>12</sup> Only individuals assessed to be low-risk to have COVID-19 will be allowed to accompany the child. However, they are not required to undergo RT-PCR testing if asymptomatic.
5. The surgical team, including the surgeon, is not required to undergo RT-PCR testing if asymptomatic, unless required otherwise by the protocol of the specific institution.
6. Currently, antibody testing has no significant role in perioperative screening and risk stratification.<sup>10</sup>

If the limitations in testing capacity of the country persist, judicious testing may be limited to patients undergoing emergency and urgent surgeries. Resumption of elective surgeries is recommended to be delayed until testing capacity of the country or institution can cater to preoperative testing of patients.<sup>11</sup>

### Timing of Surgery

1. All patients shall be referred for perioperative assessment of COVID-19 risk to the COVID team of the specific institution (pediatrics/pulmo). All urgent and elective cases should have clearance from COVID team.
2. Emergency surgeries shall be done even without RT-PCR results.
3. For urgent and elective surgeries, the following are recommended:<sup>11</sup>
  - a. If the patient travelled to a country/locality with sustained community transmission, delay the surgery for 14 days following return, even if asymptomatic.
  - b. If the patient has been in direct contact with a confirmed COVID-19 positive patient, delay the surgery for 14 days following last contact, even if asymptomatic.
  - c. If the patient presents with influenza-like illness or unexplained cough at the time of the procedure, defer the surgery until they have recovered.

### Caregiver

1. Only one companion will be allowed per child. This may be adjusted in accordance to the policies of specific institutions.
2. Assign a person of good health and with no underlying co-morbidities to accompany the child so as to avoid undue risk to the caregiver.<sup>10</sup>
3. Companions of the pediatric patients should properly wear a surgical mask at all times when in the same room of the patient.<sup>10</sup>
4. The caregiver should use disposable gloves when handling oral or respiratory secretions, feces, or urine. Wash and disinfect hands after removing gloves.<sup>10</sup>
5. Older children, >2 yo, may be asked to wear an appropriately sized mask if the patient can tolerate it.
6. Companions will no longer be allowed to accompany the patient inside the operating room.

### Outpatient Clinic and Postoperative Follow-up

1. Telemedicine and teleconsultation are highly encouraged for patient and physician interaction if available and applicable to the situation.<sup>2</sup>
2. Face to face consultation should be on appointment-basis. If possible, arrange a virtual venue to pre-screen the patient and the caregiver prior to the actual clinic appointment (e-mail a checklist, virtual interview, etc).

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