

# Changes in Paediatric Urology Practice in the Context of the COVID-19 Outbreak

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## Introduction:

The outbreak of COVID-19 infection has dramatically changed our way of life as we humans know it (being social in nature) together with our professional practice within the Paediatric Urology community. To date, no specific treatment is available for COVID-19 infection and it is generally accepted that social distancing is the main and perhaps, the only measure to avoid or contain the spreading of infection. This is so that the number of critical cases does not dramatically outweigh the resources of national health care, true for any region in the world. We need to adapt to these changing circumstances by looking at what evidence is currently available. We have pooled together information with links for benefit, we hope, although some of the information must have already hit your inbox from multiple sources.

## Issues related to clinical practice during the COVID-19 outbreak include:

- 1 The need for personal protective equipment, ventilators, human resources and medical infrastructure in order to allow health care professionals to treat COVID-19 patients.
- 2 The need to protect healthy individuals and health care professionals from the risk of COVID-19 infection when on the front line.
- 3 Identify alternative treatment strategies to avoid surgery or temporize it, if possible, or develop specific strategies for the management of COVID-19 patients should they require surgical treatment.

## Specific considerations for children:

Whilst thankfully, children seldom develop severe symptoms related to COVID-19 infection, they might be carriers, and the risk of contamination might be amplified during hospitalization when they need particular assistance and get in contact with multiple individuals. Restrictions can be considered during hospitalization, but have to be weighed against the real need for treatment to prevent unnecessary distress in the young patient. An important difference from adults, most paediatric patients are often deemed unsuitable to undergo surgical procedures under local anaesthesia.

## Principles for patient triage:

In clinical practice, the issues outlined before imply that exposure to hospital environment should be reduced to the minimum, therefore, any elective procedures be delayed. Nevertheless, defining "elective surgery" can be difficult and prone to interpretation. Definition of a procedure as urgent or emergent can be highly variable, and prioritisation of cases should also be based on staging of local spread of the infection, availability of resources, and local/regional government policy to counteract the infection spreading.

For this reason, the American College of Surgeon has underscored the importance of creating local review committees for COVID-19 related surgical triage decision making (<https://www.facs.org/covid-19/newsletter/032420/clinical-guidance#src>).

The recommendation is that the decision making on surgical cases be made on a daily basis, no later than the day before surgery, by a multidisciplinary team representing surgery, anesthesiology, and nursing in order to provide defined, transparent, and responsive oversight.

The American College of Surgeon has developed some general triage criteria for guidance (<https://www.facs.org/covid-19/clinical-guidance/triage>), but not guidelines since these must be tailored to the rapidly evolving local and regional issues.

Scientific societies, including for Urology the European Urological Association (EUA) and the American Urological Association (AUA), have developed their own information centre for COVID-19.

The EUA information centre is linked to the website of the official Journal of the society, European Urology (<https://www.europeanurology.com/covid-19-resource>).

The EUA also has a Robotic Urology Section (ERUS), which has developed guidelines for robotic during COVID-19 emergency (<https://uroweb.org/wp-content/uploads/ERUS-guidelines-for-COVID-def.pdf>). General recommendations for laparoscopic surgery, instead, have been developed jointly by the European Association for Endoscopic Surgery and the Society of American Gastrointestinal and Endoscopic Surgeons (<https://eaes.eu/eaes-and-sages-recommendations-regarding-surgical-response-to-covid-19-crisis/> and <https://www.sages.org/recommendations-surgical-response-covid-19/>).

Regarding the AUA COVID-19 information center (<https://www.auanet.org/covid-19-info-center>), it largely refers to the American College of Surgeons. Of note, the site also includes some guidance as how to manage in the operating room COVID-19 positive patients requiring treatment (<https://link.springer.com/article/10.1007/s12630-020-01617-4/figures/1> and [https://twitter.com/CJA\\_Journal/status/1236569034620985344](https://twitter.com/CJA_Journal/status/1236569034620985344)).

Other recommendations have been developed by the Research Urology Network in Italy (<https://www.minervamedica.it/en/journals/minerva-urologica-nefrologica/article.php?cod=R19Y9999N00A20032301>).

Regarding paediatric patients, the American College of Surgeons has developed some recommendations for paediatric surgery, but not for paediatric urology (<https://www.facs.org/covid-19/clinical-guidance/elective-case/pediatric-surgery>). These recommendations have been endorsed by other societies such as the American Pediatric Surgical Association ([https://www.pedsurglibrary.com/apsa/view/PedSurg%20Resource/1884034/all/COVID\\_19\\_for\\_Pediatric\\_Surgeons](https://www.pedsurglibrary.com/apsa/view/PedSurg%20Resource/1884034/all/COVID_19_for_Pediatric_Surgeons)) and the French Society for Paediatric Surgery (<https://www.chirpediatrie.fr/sfcp/covid-19.html>).

Regarding Paediatric Urology, the EUA information center includes some, actually very scant, indications (<https://els-jbs-prod-cdn.jbs.elsevierhealth.com/pb/assets/raw/Health%20Advance/journals/eururo/EURUROL-D-20-00380-1584548684213.pdf>), whereas, to date, the most detailed specific recommendations have been developed by the British Association for Paediatric Urology ([https://www.bapu.org.uk/images/files/BAPU\\_Recommendations\\_for\\_Paediatric\\_Urology\\_practice\\_during\\_Covid.pdf](https://www.bapu.org.uk/images/files/BAPU_Recommendations_for_Paediatric_Urology_practice_during_Covid.pdf)).

### Summary of Recommendations:

1. Any procedure should be deferred whenever delaying does not affect patient outcome (primarily survival), but efforts should be made to avoid patients to be lost to follow-up (e.g. telemedicine).
2. Non-surgical management should be considered, to begin with, including medical treatment (e.g. antibiotics for vesico-ureteral reflux associated urinary tract infections), endovascular embolization (e.g. for bleeding renal traumas), or urinary tract diversion (e.g. trans-urethral catheter positioning for posterior urethral valves or DJ stent placement for symptomatic upper tract dilatations).
3. Examples of procedures that should not be differed include, **urogenital tumors** where there is no space for additional chemo-/radio-therapy, **unstable traumas**, **creation of access for dialysis**, **severe/symptomatic urinary tract obstructions** not amenable to diversion, and **scrotal exploration for testicular torsion**.
4. Range of paediatric urology procedures performed and prioritization of such cases should be decided locally. Nevertheless, it is key the decision is made with a multidisciplinary input.
5. Multidisciplinary meetings should be held virtually.
6. Preoperatively, all surgical patients should be assessed for suspected symptoms, their temperature measured and, preferably, be tested for COVID-19 infection. During hospitalization all patients should wear surgical masks.
7. COVID operating rooms should be identified, if possible, and all non-tested patients should be managed as positive ones.
8. All the surgical team including surgeon, anesthetists, and nurses should wear personal protective equipment.
9. Standardized surgical techniques should be used, and the surgeries should be performed by surgeons beyond the learning curve.
10. During minimally-invasive procedures via a trans-peritoneal approach, and particularly if bowel handling is required (as virus makes its way through the faeces), efforts must be made to minimize the risk of virus diffusion with aerosol dispersal of the insufflation gas. Maneuvers include creation of small accesses to void gas leakage, use of filtration systems, lowering the pneumoperitoneum pressure, lowering electrocautery power setting, and favoring bipolar cautery over other sealing devices. All the surgical team should wear goggles, FFP2/3 masks, and body protective garb.