EAU Guidelines Office Rapid Reaction Group:
An organisation-wide collaborative effort to adapt the EAU guidelines recommendations to the COVID-19 era

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Please see appendices 1 and 2 for all members of the Guidelines Office Rapid Response Group (GORRG), the EAU Guidelines Panels and the EAU Section Offices.

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Word count: 2,448 words

Introduction

The COVID-19 pandemic is unlike anything seen before by modern science-based medicine. As of 14/4/20 there are 1,933,800 confirmed cases globally in 210 countries and 120,434 deaths [1]. Health systems globally have struggled. Anaesthetists and theatre teams have been redeployed, and Intensive Care Units struggle with demands as the entire service is refocused on managing the acutely unwell. Added to this are the effects of social confinement and isolation. Staff at risk are removed from the workforce for their own health and some of these get sick also limiting capacity. This brings into question if the latest guidelines based upon the best evidence and published only 2 weeks ago are relevant in this crisis.

As a scientific society and via the Guidelines, Sections Offices and the European Urology family of journals, we believe it is important that we try to support urologists in this difficult situation. We aim to do this by providing tools that can facilitate decision-making. Our goal is to minimize the impact and risks for both patients and health professionals delivering urological care, whenever possible although it is clear it is not always possible to mitigate them entirely. It should be understood there may not be high quality evidence for the compromises proposed but we hope this document will function as an important additional guide to the management of urological conditions during the current COVID-19 (coronavirus disease 2019) pandemic, caused by SARS-CoV-2, based on the current EAU-Guidelines.

Methodology

The Guidelines Office commissioned a Rapid Reaction Group (GORRG) on 19th March 2020 to facilitate the development of adapted guidelines to deal with a range of situations and priorities. Using the resources of the GO, the panel chairmen, panel members and in collaboration with other relevant EAU section offices, plus the Executive Committee, the aim was to ensure an aligned organisation-wide consensus and response underpinned by the best knowledge at our disposal describing how to react to the urgent crisis impacting urological care and services.

All recommendations in the Guidelines have been reviewed in light of the COVID-19 pandemic and have been adapted where appropriate. Panels also had access to and reviewed a range of national and local COVID-19 guidelines to ensure complementarity wherever possible. New evidence has been searched for by targeted (non-systematic) screening of the available published literature as well as including those recently accepted and in press with access provided by the publisher in strict confidence. The findings (mostly level 3/4 evidence) were discussed and approved by panel members across 21 EAU Guideline Panels using electronic communication. Regarding surgical approach that applies across several guidelines, it was decided that the GORRG will provide general recommendations instead of guideline-specific surgical approach recommendations in each disease area. All panels were provided the following specific terms of reference:

PROTOCOL FOR ADAPTATION OF GUIDELINES RECOMMENDATIONS TO COVID-19 PERIOD

A-Review of recommendations across 4 broad areas:

1- DIAGNOSIS
   a- IMAGING and/or TESTS
   b- INVASIVE PROCEDURES

2- SURGICAL TREATMENT AND MEDICAL THERAPY

3- FOLLOW-UP/TELEMEDICINE (give updated recommendations on follow-up tailored for the COVID-19 era, with the aim of limiting as much as possible healthcare resources without losing our ability to timely diagnose disease recurrences/progressions).

4- EMERGENCIES

B-Levels of priority

Panels were asked to provide tables with recommendations based on level of priority; not necessarily covering all recommendations on the recently published updated EAU Guidelines 2020 [2], but those that the panels felt were critical drivers of outcome and would especially be impacted by the current crisis and always based on the highest level of evidence that was possible and referenced whenever possible to maintain a transparent link from evidence to adapted recommendation. In order to achieve this, the GORRG produced a color-coded risk stratification tool (Figure 1) for completion by guideline panels to aid them with adaption of their recommendations:

- LOW PRIORITY: Clinical harm (progression, metastasis, loss of function) very unlikely if postponed for 6 months (GREEN COLOUR)
- INTERMEDIATE PRIORITY: cancel but reconsider in case of increase in capacity (not recommended to postpone more than 3 moths: Clinical harm (progression, metastasis, loss of organ function) possible if postponed 3 months but unlikely) (YELLOW COLOUR)
- HIGH PRIORITY: the last to cancel, prevent delay of > 6 weeks. Clinical harm (progression, metastasis, loss of organ function and deaths very likely if postponed > 6 weeks (RED COLOUR)
- EMERGENCY: cannot be postponed more 24 hours. Life threatening– organ function threatening condition (BLACK COLOUR)

Figure 1: levels of priority

Priority category	Low Priority	Intermediate Priority	High priority	Emergency
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation. Likely to have presented via A&E despite the current pandemic

A&E = Accident & Emergency Department.

C-Criteria for prioritization

Criteria established for prioritization regarding procedure and disease:

1- Impact of delay on primary outcomes (for instance OS in oncology, CSS in oncology, risk of metastases, kidney failure for transplant patients)
2- Possibility of alternative methods that could replace the procedure with less OR requirement.
3- Presence of co-morbidities and/or increased risk of complications.
4- There is a threat to patient life if the procedure is not performed immediately.

5- There is a threat of permanent dysfunction of the organ system if the treatment is not performed.
6- There is risk of rapidly progressing severe symptoms that are time-sensitive.

Criteria derived from COVID-19 pandemic:

- Current and projected COVID-19 cases in the facility and region. The final decisions should be made in consultation with the hospital, surgeon, patient, and other public health professionals
- Supply of PPE to the facilities in the system
- Staffing availability
- Bed availability, especially intensive care unit (ICU) beds
- Availability of adjuvant treatments (i.e chemotherapy) without which the primary treatment is less / not effective
- Ventilator availability
- Health status and age of the patient, especially given the risks of concurrent COVID-19 infection during recovery
- Urgency of the procedure
- Risk of bleeding/transfusion - There is a lack of RBC units because blood donors do not go to the hospital. Co-morbidities such as COPD should be taken into account; Patients taking anti-coagulants/anti-platelet therapy (due to increased risk for transfusion)
- Length of hospitalization
- Risk of acquiring the COVID infection by the patient during the treatment course.
- Risk of contamination of the staff by asymptomatic but already positive patient
- Capacity of COVID-19 testing

D-Peer reviewing process

Once submissions of adapted recommendations were received from all 17 EAU Guideline Panels, the GORRG proceeded with a first round of peer review and ensured uniformity of the format of recommendations and checked for consistency and limit duplication across panel recommendations.

Finally, a second step peer reviewing process was done by 7 independent Section Office members (3 experts on oncology and 3 in non-oncology, 1 to comment on both oncology and non-oncology); we also sought peer review comments from China given the significant experience they have had with COVID-19 and being a few months ahead of Europe in terms of stage of pandemic and recovery.

After the second round of peer review process the different recommendations have been released and these can be consulted for 17 Guidelines topics in Supplementary tables 1 – 17.

Discussion

The guidance produced are based on expert opinion and consensus building across the European Association of Urology with contributions from all 250 members of the EAU Guidelines Office and with contributions from the 130 key opinion leaders forming the membership of the EAU Section Offices. It is important to emphasise that during the rapidly evolving COVID-19 pandemic, this guidance may further change and critically will require adaptation to local resources, health systems and specific circumstances of each country or city bearing in mind that different countries and indeed different cities are likely to be at different phases of the pandemic and national/local health system capacities must dictate level of prioritisation implemented in line with local COVID-19 policies.

In addition, there are some overarching principles which should be emphasized (as presented in Table 1). In order to minimize the number of staff that become infected, all medical personnel should comply with the Personal Protection Equipment (PPE) regulations. If possible, patients should be asked if they are at risk of COVID-19 prior to any visit in a practice or clinic or hospital setting. Patients who are currently known to be shedding COVID-19 virus should postpone any investigations of other symptoms unless they are thought to be life threatening. However, urologists working in hospitals treating COVID-19 patients may be required to perform urgent investigations on infected patients. In these cases, procedures should be performed in dedicated consultation or operating rooms following the hospital recommendation for staff PPE. Even following a negative COVID-19 test result, it is important to remember the relatively high risk of a false negative result and as a consequence ensure all the necessary PPE tools and general recommendations to reduce COVID-19 transmission are adequately followed [3] (Table 1). It is also prudent during this pandemic, in the absence of extensive community testing and effective isolation/quarantine strategies in place, that health professionals perform their duties on the presumption that all patients they treat are potentially infected with COVID-19 even if asymptomatic given that there is increasing evidence of high infection rates in asymptomatic individuals in countries conducting extensive community testing of their citizens [4, 5]. In this regard, it is important to consider not only the risk for staff but for the patients. Recent evidence from Wuhan reported a 20% mortality rate in asymptomatic patients who tested COVID positive after the surgical procedure [6]. Onset of symptoms were within 2.6 days and 44.1% required ICU support. Out of 20 asymptomatic COVID positive patients undergoing level-3 complexity procedures, which are equivalent to urological transabdominal or retroperitoneal interventions, 7 patients died on ICU from ARDS (Table 1).

If surgical procedures are unavoidable, it is recommended that all procedures should be performed by experienced urologists confident in the procedure. They should be performed with the minimum number of staff members, who should also be fully trained and experienced. Furthermore, no external observers should be present during the procedure (i.e. fellows, or students) [7]. Use of ultrasonic scalpels or electrical equipment producing surgical smoke, should be discouraged because such smokes could carry the COVID-19 [8]. In previous studies, activated *Corynebacterium*, papillomavirus and HIV have been detected in surgical smoke and several doctors contracted a rare papilloma virus suspected to be connected to surgical smoke exposure. There is no reason to suppose COVID-19 infection could not be spread in the same way. One study found that after using electrical or ultrasonic equipment for 10 minutes, the particle concentration of the smoke in laparoscopic surgery was significantly higher than that in traditional open surgery [8]. Thus, it is recommended to lower electrocautery power settings as much as possible. There is no conclusive evidence regarding the differences in risks of open versus laparoscopic surgery for the surgical team. However, laparoscopic surgery may be associated with a higher amount of smoke particles than open surgery [9]. On the other hand, minimally invasive surgery has the benefit of reducing length of hospital stay and reduces the risks to the patient for contracting COVID-19 whilst in hospital. During laparoscopy, surgical smoke is released into theatre under pressure at several stages of surgery. It is advisable to keep intraperitoneal pressure as low as possible and to aspirate the inflated CO_2 as much as possible before removing the trocars [7-9] (Table 1).

The duration and frequency of shedding of COVID-19 virus in urine is unknown [10]. However, a recent study by Ling et al. reported limited persistence of SARS-CoV-2 nucleic acid in urine [11]. This data does not prove a link between urine spillage and virus transmission. However, although no evidence of disease transmission through urine is demonstrated yet, urine sampling (for urine culture, dipsticks and other analyses), urethral catheterization and endoscopic procedures (e.g., TURP, TURB, ureteral stenting, etc.) should be executed with caution. As spills are inevitable, surfaces should be rapidly cleaned by using appropriate absorbent and decontamination with chlorine (5000-10000 mg/L) or another appropriate disinfectant (note that chlorhexidine is

ineffective against COVID-19 and is not appropriate) [12]. Spills should be handled according to local guidelines. Similarly, in case of spillage leading to unwanted contact (i.e., accidental exposure) with a member of the staff, appropriate measures should be taken following local protocols.

It is now clear that SARS-CoV-2 is present in the stools of COVID-19 patients. Therefore, the transmission during various procedure (e.g., transrectal prostate biopsy, urinary diversions) might be possible [13]. Therefore, even if clear evidence of COVID-19 virus spreading through faeces is not demonstrated yet, it is preferable to minimize risks of faecal transmissions.

Social distancing is the key player to fight against COVID-19 pandemic. We have a duty to avoid unnecessary outpatient visits and in doing so reduce the chance of virus transmission. Increasing use of Telehealth may be an important way to continue to support patients and their carers during this crisis. It will be interesting to see if this change, born of necessity, is incorporated into urological practice beyond the pandemic [14, 15] (Table 1).

While it cannot be predicted when we will be able to revert back from the acute phase of the COVID-19 pandemic and resume more normal levels of urological care, we do need to plan ahead on how the urological community should do this.

The most logical step will be to reverse back through the aforementioned prioritisation stages. During this process we will need to confer with our fellow surgical (sub)specialties to prioritize the available surgical time and resources among all surgical patients.

Undoubtedly there will be cases where the optimal surgical treatment timepoint will be surpassed. These patients may be at risk of sub-optimal outcome or increased psychological burden due to delayed surgery and should be prioritized in the long waiting lists that we will undoubtedly be facing on the other end of this crisis.

Conclusion

Although the European Association of Urology is a family of 19,000 members and, beyond our membership, the EAU feels a huge sense of responsibility toward each and every urologist globally, wherever they may be, appreciating that the EAU Guidelines are now endorsed by national societies from 72 countries. This extended family ethos is even more important at a time like this when we are acutely aware of the despair that nations and their citizens are experiencing around the world. For instance,we realise that our colleagues and friends in Italy, Spain, France, UK, other EU member states and increasingly in the United States of America are being particularly impacted, whilst on the other side of the world, our friends in China, South Korea, and Japan look to rebuild and return to some form of new normality. Our thoughts are with each and every one of you. Despite these incredibly difficult times, key opinion leaders from across breadth of our membership have come together like never before to rapidly produce this publication of COVID-19 adapted EAU Guideline Recommendations which we hope will fill an important urological practice void and assist urologist surgeons across the globe as they do their very best to deal with the crisis of our generation.

Table 1*: General recommendationa applicable during the COVID-19 pandemic

General recommendations for surgical procedures
1. Depending on the resources and capacity we recommend treating only high-priority and emergency cases surgically during the COVID pandemic.
2. Consider not only equipment, OR and ICU beds capacity but also blood supplies available, drugs shortage in order to prioritize your surgeries.
3. Consider that even if capacity is available low priority patients increase the footfall and the risk

of COVID transmission between patients and staff.
4. Consider that surgery has been reported to be harmful in asymptomatic patients who subsequently tested COVID positive [6].
5. Consider treating intermediate priority patients if capacity is available but not during the COVID surge
6. Consider older patients with comorbidity at severe risk of COVID infection and a fatal outcome. Therefore, carefully balance if in high-priority cases surgery is the only alternative.
7. Where ventilator capacity for COVID patients has been breached, high-priority surgical candidates requiring ICU ventilation should be triaged according to local recommendations – or if unavailable – age and comorbidity.
8. Follow the local recommendations to test staff and patients for COVID, if resources are available. These may differ per hospital and country and familiarize yourself with them. Be aware that they may change as new information is coming in.
9. Follow the local recommendations for personal protective equipment (PPE), if resources are available; the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) advise full PPE irrespective of COVID status of the patient. Familiarize yourself with their recommendation [16, 17].
10. Wear full PPE for COVID positive patients according to the World Health Organization (WHO). This should include double gloves, gowns, face shields and virus-proof masks [17, 18].
11. Intubation and extubation should preferably take place in a negative pressure room if available [19].
12. All non-essential staff should stay outside the operating room during the procedure
13. Set electrosurgery units to the lowest possible settings to reach the required effect.
14. Avoid or reduce use of monopolar electrosurgery, ultrasonic dissectors, and advanced bipolar devices as these can lead to particle aerosolisation.
15. Use, if available, monopolar diathermy handheld devices with attached smoke evacuators.
16. Clean surgical equipment of COVID positive or suspected patients separately.

General guidance on what to do when faced with a known COVID-19-positive patient needing surgery (these measures partially also applicable for COVID-19-negative patients)

1. A specially equipped dedicated OR has to be prepared for these cases. For endourology, a mobile C-arm fluoroscopic X-ray system for radiological imaging and experienced personal for its handling has to be in the special operating room.
2. Surgeons and operating team (surgeons, anaesthetists, nurses, technicians, nursing assistants / healthcare workers and hospital housekeepers) in OR should be completely protected against infection of COVID-19 and adopt adequate protection devices.
3. All minimally invasive procedures should be preferably performed by experienced surgeons and with the minimum number of experienced OR staff members required. Additionally, no external observer is allowed in the OR [7] (https://uroweb.org/wp-content/uploads/ERUS-guidelines-for-COVID-def.pdf)
4. To date, there is no specific data demonstrating an aerosol presence of the COVID-19 virus released during minimally invasive abdominal surgery.
5. Smoke evacuation systems with active filtered smoke evacuation mode, capable of filtering the aerosolized particles from the carbon dioxide should be provided during laparoscopic surgeries [16].
6. Utilizing CO_2 insufflation with a closed system with appropriate filtering of aerosolized particles
    a. Not inserting 8 mm instruments in a 12 mm da Vinci trocar without a reducer
    b. Not inserting a 5 mm instrument in a 12 mm da Vinci trocar even with the reducer in place
    c. Turning CO_2 insufflation off and venting the gas through a filter prior to specimen extraction

d. Consultation with the CO_2 insufflation manufacturer used in your hospital may be necessary to ensure proper settings are selected for maximal filtration effect.
e. The full recommendation of SAGES on this topic as well as the cited published evidence can be found on the SAGES website [16]. A recent publication that reports the experience of minimally invasive surgeons from China and Italy in the setting of known/suspected COVID-19 can be accessed at the Annals of Surgery [8].

7. For (robot-assisted) laparoscopy and retroperitoneoscopy lowest allowed intraabdominal pressure with the use of intelligent integrated Insufflation systems is recommended [7] (ERUS).
8. It is recommended lowering electrocautery power setting as much as possible in order to reduce the surgical smoke production especially in laparoscopic surgery. During access, electrocautery should be provided with automatic suction system.
9. Evacuation of irrigation fluid during endourological procedures (cystoscopy, TURB, BPH endoscopic surgery, URS, RIRS, PCNL) should be collected through a close system.

General guidance for testing patients before surgery in the COVID-19 period

1. Patients with clinical symptoms like fever and respiratory distress and/or with travel history to endemic areas and previous contact with COVID-19 patients should all undergo preoperative COVID-19 test. In an emergency situation it is suggested to handle those patients as COVID-19 positive patient in order to reduce risk of contagion for both patients and health-care workers.
2. Patients without any clinic symptoms and without travel history to endemic areas and previous contact in the last 2 weeks with a COVID-19 positive patient: Testing of elective patients is recommended whenever possible within 48 hours prior to surgery in an outpatient clinic setting. One may consider starting with PCR testing and withholding a chest CT only if the PCR is positive for a COVID-19 infection. However, this might have severe logistical implications (patients need to visit the hospital repeatedly) and joint testing of PCR and CT may be a more desirable and practical approach, depending on the local situation. Main reason for that approach:
    a. Patients may be in the incubation period of a COVID-19 infection and subsequently develop COVID-19 post-operatively, placing them at risk for adverse post-operative outcomes [6].
    b. Patients may be asymptomatic/mildly symptomatic carriers and shedders of SARS-CoV-2 and place hospital workers at risk, particularly during intubation and aerosolizing procedures.
    c. Patients may be asymptomatic/mildly symptomatic carriers and shedders of SARS-CoV-2 and place other hospitalized patients at risk, who are often in higher age groups with co-morbidities and at higher risk of severe COVID-19 disease.
3. The group is aware that at present, different triage policies may be applicable depending on region or country. Even following accounts of the false negative results of the test and the fact that PPE has to be adopted in all surgical patients, information on the test may be useful in the post-operative period.
4. In addition, we strongly recommend advising patients to comply with general directions regarding social distancing as stated by the government since this will likely lower the risk for COVID-19 disease at the time of operation.

General guidance on other assistance aspects beyond surgery

1. TELEMEDICINE
2. Potential or proven COVID-19-positive patients must be treated according to local, national and WHO-requirements [18]. In that case a comprehensive and robust infection control workflow has to be followed [20].
3. A network of expert high-volume centres at the regional, national or even supranational level, should guarantee the continuity of the oncological care in an appropriate way, ensuring the

availability of hospitalisation beds and the timely management of the new patients.
4. Remote consultation and multidiscipline team (MDT) are recommended to offer the optimum therapeutics.
5. Testing for SARS-CoV-2 should be considered before any high-dose chemotherapy.
6. Guide the patients to get access to non-emergency medical services such as chronic diseases treatment online to reduce the number of visitors in hospitals.
7. Encourage patients to take full advantage of digital self-service devices to avoid contact with others to reduce the risk of cross infections.

***Disclaimer: The EAU Guidelines Office COVID-19 recommendations are to support health-care systems under severe constrain during the pandemic, but their application should be modulated according to local pandemic conditions and restrictions in clinical and surgical activity due to local medical directives and guidance.**

The EAU Guidelines Office COVID-19 recommendations can be consulted:

Suppl. Table 1: Recommendations from the EAU NMIBC Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 2: Recommendations from the EAU UTUC Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 3: Recommendations from the EAU MIBC Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 4: Recommendations from the Prostate Cancer Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 5: Recommendations from the EAU RCC Guideline Panel applicable during the COVID-19 pandemic

Suppl. Table 6: Recommendations from the EAU Testicular Cancer Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 7: Recommendations from the EAU Penile Cancer Guidelines applicable during the COVID-19 pandemic

Suppl. Table 8: Recommendations from the EAU Management of Non-neurogenic Male LUTS Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 9: Recommendations from the EAU Urinary Incontinence Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 10: Recommendations from the EAU Neuro-urology Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 11: Recommendations from the EAU Renal Transplantation Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 12: Recommendations from the EAU Urolithiasis Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 13: Recommendations from the EAU Urological Infections Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 14: Recommendations from the EAU Sexual and Reproductive Health Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 15: Recommendations from the EAU/ESPU Paediatric Urology Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 16: Recommendations from the EAU Chronic Pelvic Pain Guidelines Panel applicable during the COVID-19 pandemic

Suppl. Table 17: Recommendations from the EAU Urological Trauma Guidelines Panel applicable during the COVID-19 pandemic

Supplementary Table 1: Recommendations from the EAU NMIBC Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related problems) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	1	3	3	3
COVID-recommendation	**Defer by 6 months**	**Diagnose before end of 3 months**	**Diagnose within < 6 weeks**	**Diagnose within < 24 h**
			• US and CT-IVU in patients with visible (macroscopic) haematuria • Cystoscopy in patients with visible (macroscopic) haematuria without clots (It should be abandoned in cases with unequivocal lesion on US or CT-IVU. In such a situation we should proceed immediately to TURB)	TURB in patients with visible (macroscopic) haematuria and clot retention requiring bladder catheterisation
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related complications) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	3	3	3

COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h
Transurethral resection of the bladder and 2nd TURB	• TURB in patients with small papillary recurrence/s • (< 1 cm) and history of Ta/1 low grade tumour* • 2nd TURB in patients with visibly complete initial TURB of T1 lesion with muscle in the specimen**	TURB in patients with any primary tumour or recurrent papillary tumour > 1cm and without haematuria or without history of high-risk (HG) NMIBC	• TURB in patients with bladder lesion and intermittent macroscopic haematuria or history of high-risk NMIBC • 2nd TURB in patients with visibly residual tumour after initial resection and large or multiple T1HG at initial resection without muscle in the specimen	TURB in patients with macroscopic haematuria with clot retention requiring bladder catheterisation
Intravesical instillations	• Early post-operative instillation of chemotherapy in presumably low or intermediate-risk tumours*** • Intravesical BCG or chemotherapy instillations in patients with intermediate-risk NMIBC***		Intravesical BCG immunotherapy with one year maintenance in patients with high-risk NMIBC	
Radical cystectomy		• Immediate radical cystectomy in patients with highest-risk NMIBC • Early radical cystectomy in patients with BCG unresponsive tumour or BCG failure		

* May be just followed or fulgurated during office cystoscopy.
** May be postponed after BCG intravesical instillations.
*** May be abandoned.

Follow-up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis, loss of renal function) very unlikely if postponed 6 months	Clinical harm (progression, metastasis, loss of renal function) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related complications) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	3	3	3
COVID-recommendation	**Defer by 6 months**	**Follow-up before end of 3 months**	**Follow-up within < 6 weeks**	**Follow-up within < 24 h**
	• Follow-up cystoscopy in patients with the history of low- or intermediate-risk NMIBC without haematuria • Upper tract imaging in patients with the history of high-risk NMIBC	Follow-up cystoscopy in patients with the history of high-risk NMIBC without haematuria	Follow-up cystoscopy in patients with NMIBC and intermittent haematuria	Cystoscopy or TURB in patients with visible (macroscopic) haematuria with clots
Abbreviations				
BCG = bacillus Calmette-Guérin; CT = computed tomography; HG = high grade; IVU = intravenous urography; LUTS = lower urinary tract symptoms; NMIBC = non-muscle-invasive bladder cancer; TURB = transurethral resection of the bladder; US = ultrasound.				

Supplementary Table 2: Recommendations from the EAU UTUC Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related problems) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	1	1	3
COVID-recommendation	**Defer by 6 months**	**Diagnose before end of 3 months**	**Diagnose within < 6 weeks**	**Diagnose within < 24 h**
		• In confirmed UTUC perform a urethrocystoscopy to rule out bladder tumour** • Use diagnostic ureteroscopy and biopsy if imaging and cytology are not sufficient for the diagnosis and/or risk-stratification of the tumour*	• Perform a computed tomography (CT) urography • Consider not using diagnostic URS for unequivocal lesions suggestive of high-risk UTUC***	Perform CT-urography in patients with visible (macroscopic) haematuria, associated with clot retention and drop in haemoglobin
* Consider to rely on imaging / cytology for risk stratification. ** May be temporarily postponed to the post-operative course. *** The definitions of low- and high-risk UTUC may be found in the extended text of guidelines.				
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related complications) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	1	3	3	3
COVID-	**Defer by 6 months**	**Treat before end of 3 months**	**Treat within < 6 weeks**	**Treat within < 24 h**

recommendation				
	• Offer peri-operative chemotherapy to patients with muscle-invasive UTUC* • Deliver a post-operative bladder instillation of chemotherapy to lower the intravesical recurrence rate**	Offer kidney-sparing management as primary treatment option to patients with low-risk tumours*** In metastatic disease: • Use cisplatin-containing combination chemotherapy with GC, MVAC, preferably with G-CSF, HD-MVAC with G-CSF or PCG**** • First-line treatment in patients unfit for cisplatin ***** • Offer checkpoint inhibitors pembrolizumab or atezolizumab depending on PD-L1 status	Perform radical nephroureterectomy (RNU) in patients with high-risk non-metastatic UTUC****** • Perform a template-based lymphadenectomy in patients with muscle-invasive UTUC • Remove the bladder cuff in its entirety • Offer kidney-sparing management to patients with solitary kidney and/or impaired renal function, providing that it will not compromise survival. This decision will have to be made on a case-by-case basis with the patient	• Perform radical nephroureterectomy as a palliative treatment to symptomatic patients (i.e. haematuria – clots) with resectable locally advanced tumours in patients with muscle-invasive UTUC******* Metastatic disease: • Excruciating pain • Spinal compression • Brain metastasis and other neurological loss of function
* Peri-operative chemotherapy must be discussed with the potential severe COVID-19 infection in case of neutropenia. ** Dependent on the individual local situation and burden of the health care system, may be avoided (cystoscopy at 3-4 months is necessary in this case). Postponement for more than 6 weeks makes no sense. *** May be temporarily postponed (up to 3 months). **** Choose combination cisplatin-gemcitabine + G-CSF (over MVAC). ***** The impact of checkpoint inhibitors on COVID-19 outcome is unknown to date. Postpone the treatment for few weeks, whenever possible. ****** The definitions of low- and high-risk UTUC may be found in the extended text of guidelines. ******* Priority should be based on the type of symptoms to palliate (in case of pain, non-surgical alternative should be prioritised).				
Follow-up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**

Definition	Clinical harm (progression, metastasis, loss of renal function) very unlikely if postponed 6 months	Clinical harm (progression, metastasis, loss of renal function) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related complications) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	3	3	3
COVID-recommendation	**Defer by 6 months**	**Defer by 3 months**	**Follow-up < 6 weeks**	**Follow-up within < 24 h**
	After radical nephroureterectomy: perform cystoscopy and urinary cytology at 6 months	• After kidney-sparing management in low risk tumours tumour: perform cystoscopy, CT urography and ureteroscopy at 3 months • After radical nephroureterectomy: perform computed tomography (CT) urography and chest CT at 3 months • After kidney-sparing management in high-risk tumours tumour: perform cystoscopy, urinary cytology, CT urography, chest CT and ureteroscopy at 3 months.	Any UTUC on systemic treatment. Follow up should be based on CT urography, cystoscopy and cytology	Control of treatment for pain, spinal cord compression and haematuria
Abbreviations				
CT = computed tomography; GC = gemcitabine plus cisplatin; G-CSF = granulocyte colony-stimulating factor; HD-MVAC = high-dose methotrexate, vinblastine, adriamycin plus cisplatin; PD-L1 = programmed death ligand 1; PCG = paclitaxel, cisplatin, gemcitabine; UTUC = upper tract urothelial cell carcinoma.				

Supplementary Table 3: Recommendations from the EAU MIBC Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related problems) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	3	3	3
COVID-recommendation	**Defer by 6 months**	**Diagnose before end of 3 months**	**Diagnose within < 6 weeks**	**Diagnose within < 24 h**
Staging / Imaging			In case MIBC is diagnosed staging imaging by f.i. CT thorax-abdomen-pelvis should not be delayed	
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related complications) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	3	3	3
COVID-recommendation	**Defer by 6 months**	**Treat before end of 3 months**	**Treat within < 6 weeks**	**Treat within < 24 h**
Transurethral resection of the bladder			In case of suspicion of an invasive tumour (identified on imaging) perform a TURB	

Cystectomy for MIBC		• Offer RC in T2-T4a, N0M0 tumours • Once RC is scheduled the urinary diversion or organ preserving techniques should be done as would be planed outside this crisis period • Multimodality bladder sparing therapy can be considered for selected T2N0M0 patients		
Palliative cystectomy			Consider other alternatives such as radiotherapy +/- chemotherapy	In case of intractable haematuria with anaemia treat with radiotherapy +/- chemotherapy
Neoadjuvant chemotherapy	• Consider omitting neoadjuvant chemotherapy (NAC) in T2/T3 focal N0M0 patients. • The proven benefit of NAC in T2 tumours (which is limited), has to be weighed against the risks, especially in patients with a short ife-expectancy and patients with (pulmonary and cardiac) comorbidity. • Postpone inclusion in NAC trials (ONLY OFFER TO CISPLATIN-ELIGIBLE PATIENTS)		Individualize risk in high burden T3/T4 N0M0 patients while they are on the waiting list (ONLY RELEVANT FOR CISPLATINUM-ELIGIBLE PATIENTS)	

Adjuvant chemotherapy			Offer adjuvant cisplatin-based combination chemotherapy to patients with pT3/4 and/or pN+ disease if no NAC has been given	
Chemoradiation		• Chemoradiation should be offered to improve local control in cases of inoperable locally advanced tumours • In patients with clinical T4 or clinical N+ disease (regional), radical chemoradiation can be offered accepting that this may be palliative rather than curative in outcome		
Supportive care				Acute renal failure for locally advance bladder cancer: treat with nephrostomy at ambulatory setting Bleeding with haemodynamic repercussion: consider embolisation or haemostatic RT
Metastatic disease: First-line therapy		• Assess risk and benefit individually in each patient. Asymptomatic patients with low disease burden can in selected cases postpone start of treatment e.g. 8-12 weeks under clinical surveillance • Use cisplatin-containing combination chemotherapy with GC, MVAC, preferably	• In symptomatic metastatic patients the benefit of treatment is likely higher than the risk. Supportive measures such as use of GCSF should be considered • Use cisplatin-containing combination chemotherapy with GC, MVAC, preferably with G-	

		with G-CSF, HD-MVAC with G-CSF or PCG • Offer checkpoint inhibitors pembrolizumab or atezolizumab depending on PD-L1 status	CSF, HD-MVAC with G-CSF or PCG • Offer checkpoint inhibitors pembrolizumab or atezolizumab depending on PD-L1 status	
Metastatic disease: Second-line therapy		Offer checkpoint inhibitor pembrolizumab to patients progressing during, or after, platinum-based combination chemotherapy for metastatic disease. Alternatively, offer treatment within a clinical trial setting		
Post-operative chemotherapy Surgery after partial or complete response		In case of limited OR time only consider surgery after a favourable response to chemotherapy, and if there are a max of 2 lesions and no unfavourable site.		
Follow-up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis, loss of renal function) very unlikely if postponed 6 months	Clinical harm (progression, metastasis, loss of renal function) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia- related complications) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	3	3	3
COVID-recommendation	**Defer by 6 months**	**Follow-up before end of 3 months**	**Follow-up within < 6 weeks**	**Follow-up within < 24 h**

Routine checking after radical cystectomy	Extend follow-up periods to 6 months			
Abbreviations				
CT = computed tomography; GC = gemcitabine plus cisplatin; G-CSF = granulocyte colony-stimulating factor; HD-MVAC = high-dose methotrexate, vinblastine, adriamycin plus cisplatin; MIBC = muscle-invasive bladder cancer; NAC = neoadjuvant chemotherapy; PD-L1 = programmed death ligand 1; PCG = paclitaxel, cisplatin, gemcitabine; RC = radical cystectomy; RT = radiotherapy; TURB = transurethral resection of the bladder.				

Supplementary Table 4: Recommendations from the Prostate Cancer Guidelines Panel applicable during the COVID-19 pandemic

Screening and early detection				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	2			
COVID-recommendation	Defer by 6 months	Diagnose before end of 3 months	Diagnose within < 6 weeks	Diagnose within < 24 h
	To be postponed until the end of the pandemic (at least as long as the confinement is ongoing)			
Diagnostic evaluation^				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	1	3	3	3
COVID-recommendation	Defer by 6 months	Diagnose before end of 3 months	Diagnose within < 6 weeks	Diagnose within < 24 h
Benign feeling gland, PSA < 10 ng/ml	Upfront pre-biopsy mpMRI if resources allow then biopsy. If not, defer biopsy until after COVID			
Abnormal DRE or PSA ≥10 ng/ml	Upfront pre-biopsy mpMRI if resources allow	Biopsy without MRI	Biopsy without MRI if locally advanced or highly symptomatic	
Symptoms of metastasis			• Stage using CT and/or bone scan.	

			• Commence ADT if radiological evidence of metastatic prostate cancer • Biopsy can be postponed	
Impending spinal cord compression				Immediate treatment if diagnosis is clear on basis of PSA and imaging*
^ The decision whether to proceed with further diagnostic or staging work-up is guided by which treatment options are available to the patient, taking the patient's life expectancy into consideration. Diagnostic procedures that will not affect the treatment decision must be avoided. During the ongoing pandemic, the need for further work-up must be balanced against the increased risk for a patient to visit the hospital. * Depending of the local situation, discuss decompressive surgery (if needed) or upfront EBRT on top of systemic treatment.				
Treatment of localised prostate cancer: low risk				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3			
COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h
Active surveillance	• Postpone confirmatory rebiopsy as well as DRE • PSA can be postponed for up to 6 months			
Active treatment	Postpone it and patients should be encouraged to have treatment deferred for 6-12 months			
Treatment of localised prostate cancer: intermediate risk				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if	Clinical harm (progression, metastasis) possible if postponed	Clinical harm (progression, metastasis) and (cancer	Life-threatening situation or opioid-dependent pain

	postponed 6 months	3-4 months but unlikely	related) deaths very likely if postponed > 6 weeks	
Level of evidence		3		
COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h
Active surveillance (G3+4)		DRE and repeated biopsy when medical resources allow		
RP		• It can be postponed until after pandemic • Do NOT use neoadjuvant ADT		
EBRT		• Use moderate hypofractionation (20x3 Gy) starting with neoadjuvant ADT that might be prolonged for up to 6 months • Avoid invasive procedures such as fiducial insertion and/or rectal spacers		
Brachytherapy	to postpone or to consider an alternative modality (invasive procedures carry a higher risk of COVID-19 transfer)			
Treatment of localised prostate cancer: high risk				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence		3		
COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h

RP		Postpone until after pandemic. If patient anxious consider ADT + EBRT		
EBRT		• Use immediate neoadjuvant ADT up to 6 months followed by EBRT and long term ADT • Do not use fiducials or spacers		
Treatment of locally advanced prostate cancer (including cN1)				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence			2	
COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h
RP			• Do not use neoadjuvant ADT to postpone RP • Consider long term ADT + EBRT as an alternative to surgery	
EBRT			• Start immediate neoadjuvant ADT if symptomatic, followed by EBRT 6-12 months later • Avoid invasive procedures such as fiducial insertion and/or rectal spacers	
Follow-up after treatment with curative intent^				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if	Clinical harm (progression, metastasis) possible if postponed	Clinical harm (progression, metastasis) and (cancer	Life-threatening situation or opioid-dependent pain

	postponed 6 months	3-4 months but unlikely	related) deaths very likely if postponed > 6 weeks	
Level of evidence	3	3		
COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h
Persistently elevated PSA	Postpone PET imaging until the pandemic is solved	If a treatment is deemed necessary, start ADT and postpone further work-up and potential EBRT later		
PSA relapse after local treatment	Defer images until after the pandemic for those with a PSA relapse	• After RP: offer salvage EBRT for patients with EAU High-risk BCR if it is available. If not consider ADT with EBRT after the pandemic • After EBRT: If salvage is needed, offer ADT initially if the PSA DT is < 12 months		
^ During the pandemic, offer telemedicine as often as possible. This should be considered as standard provided the patient has no unexplained complication from treatment. Only patients in absolute need for clinical exam should have it. Indeed, it may well be possible to postpone for some months physical assessment and use telemedicine interview.				
Treatment of metastatic hormone sensitive prostate cancer (mHSPC)				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3		2	
COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h
	For men with low volume metastatic disease when ADT + prostate EBRT is considered, postpone EBRT, until the		Offer immediate systemic treatment* to M1 patients (alphabetic order: abiraterone acetate plus prednisone or	

	pandemic is no longer a major threat		apalutamide or enzalutamide)	
* SOC is ADT + something (alphabetic order: abiraterone acetate plus prednisone or apalutamide or enzalutamide, or docetaxel). * Avoid ADT combined with docetaxel based on the risk of neutropenia and frequent hospital visits during the pandemic – The use of abiraterone acetate with 5 mg prednisone daily might be reconsidered (steroid use).				
Treatment of metastatic castration-resistant prostate cancer (mCRPC)^				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence			2	
COVID-recommendation	Defer by 6 months	Treat before end of 3 months	Treat within < 6 weeks	Treat within < 24 h
First line			Treat patients with mCRPC with life-prolonging agents. Base the choice of first-line treatment on the performance status, symptoms, comorbidities, location and extent of disease, patient preference, and on the previous treatment for hormone-sensitive metastatic PCa (HSPC) as well as use of medical resources and specific risk during the COVID-19 pandemic*	
* Chemotherapy should be avoided as much as possible. If absolutely needed: docetaxel 75 mg/m² should be given 3-weekly with systematic G-CSF to avoid a higher number of visits or with 50 mg/m² every 2 weeks. Cabazitaxel 20 mg/m² with systematic GCSF should be given if indicated and no other treatment option is available. Sipuleucel T should not be used (medical resources needed) – Abiraterone + Pred 10 mg / daily might be reconsidered (steroid use).				
Abbreviations				
ADT = androgen deprivation therapy; DT = computed tomography; DRE = digital rectal examination; DT = doubling time; EBRT = external beam radiation				

therapy; G-CSF = granulocyte-colony stimulating factor; mpMRI = multiparametric magnetic resonance imaging; PCa = prostate cancer; PET = positron emission tomography; Pred = prednisone; PSA = prostate-specific antigen; RP = radical prostatectomy.

Supplementary Table 5: Recommendations from the EAU RCC Guideline Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis, loss of renal function) very unlikely if postponed 6 months	Clinical harm (progression, metastasis, loss of renal function) possible if postponed 3 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	1	3	3	3
COVID-recommendation	**Defer by 6 months**	**Diagnose before end of 3 months**	**Diagnose within < 6 weeks**	**Diagnose within < 24 h**
	• Cross-sectional diagnostic and staging imaging for all renal tumours < 4 cm suspected on ultrasound • Renal mass biopsy for all cT1a tumours (small renal masses < 4 cm) cN0 cM0 • Cross sectional imaging for complex cysts irrespective of size on ultrasound	Cross-sectional diagnostic and staging imaging for all renal tumours > 4 - < 7 cm suspected on ultrasound	• Staging for clinically advanced or suspected metastatic renal cancer • Renal mass biopsy to establish subtype for systemic therapy in metastatic IMDC intermediate- and poor-risk patients • Adequate cross-sectional imaging to diagnose thrombus level in suspected advanced RCC with IVC thrombi [$]	• Visible (macroscopic) haematuria with clot retention • Suspected bowel obstruction in conjunction with a known history of renal mass • Excruciating pain in conjunction with a known history of renal mass • Spinal cord compression in conjunction with a known history of renal mass
* Some patients with kidney cancer are octogenarians and older. They may require ITU support based on frailty and comorbidity. In case of low resources but competing high-priority cases preference should be given to younger patients not requiring ITU support. In addition old age and frailty are risk factors for community or hospital acquired COVID-19. [$] Some patients with IVC thrombi (level 3-4) may require cardiovascular bypass and ITU support. In case of low resources but competing high-priority cases preference should be given to patients not requiring ITU support.				
Treatment of locally confined or advanced but non-metastatic RCC				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**

Definition	Clinical harm (progression, metastasis, loss of renal function) very unlikely if postponed 6 months	Clinical harm (progression, metastasis, loss of renal function) possible if postponed 3 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	1	3	3	3
COVID-recommendation	**Defer by 6 months**	**Treat before end of 3 months**	**Treat within < 6 weeks**	**Treat within < 24 h**
	• All cT1a tumours (small renal masses < 4 cm) cN0 cM0 • Bosniak III cysts irrespective of size[1] • Treatment of AML (embolisation, ablation) > 4 cm[2,3] • Participation in neoadjuvant or adjuvant trials	All cT1b-cT2a cN0 cM0 asymptomatic RCC*	• Clinically advanced RCC, cT2b-4, cN0-cN1 cM0* • Advanced RCC with IVC thrombi Novick level 1-4[$] • Or other, if symptomatic	Actively bleeding *symptomatic* renal mass: • Try embolisation first. • Surgical intervention only if embolisation not successful or not available

* Some patients with kidney cancer are octogenarians and older. They may require ITU support based on frailty and comorbidity. In case of low resources but competing high-priority cases preference should be given to younger patients not requiring ITU support. In addition old age and frailty are risk factors for community or hospital acquired COVID-19.

[$] Some patients with IVC thrombi (level 3-4) may require cardiovascular bypass and ITU support. In case of low resources but competing high-priority cases preference should be given to patients not requiring ITU support.

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3. Fernández-Pello S, et al. Eur Urol Oncol. 2020 Feb;3(1):57-72. Management of Sporadic Renal Angiomyolipomas: A Systematic Review of Available Evidence to Guide Recommendations from the European Association of Urology Renal Cell Carcinoma Guidelines Panel.

Treatment of metastatic RCC

Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis, loss of renal	Clinical harm (progression, metastasis, loss of renal function)	Clinical harm (progression, metastasis) and (cancer	Life-threatening situation or opioid-dependent pain

	function) very unlikely if postponed 6 months	possible if postponed 3 months but unlikely	related) deaths very likely if postponed > 6 weeks	
Level of evidence	3	1-3	3	3
COVID-recommendation	**Defer by 6 months*** **	**Treat before end of 3 months***	**Treat within < 6 weeks****	**Treat within < 24 h**
	<u>Synchronous mRCC:</u> Cytoreductive nephrectomy and in *asymptomatic* patients with oligometastatic disease and IMDC favourable risk, metastasectomy or other forms of focal therapy <u>Metachronous mRCC:</u> Oligometastatic *asymptomatic* metastases in IMDC favourable risk*	<u>Non-progressing *asymptomatic* metastatic RCC in IMDC favourable and intermediate risk</u> [Consider surveillance rather than VEGF-targeted therapy for some*]	<u>Progressive metastatic RCC irrespective of IMDC risk</u> [Consider starting on VEGFR-TKI rather than immune checkpoint inhibitor therapy**]	• Actively bleeding renal mass with *symptoms:* Try embolisation first. Surgical intervention only if embolisation not successful or not available. • Spinal cord compression in conjunction with mRCC • Central or peripheral nervous system disorders suggestive of symptomatic brain metastases • Serious adverse events related to systemic treatment

* An initial "wait and see" strategy with re-imaging in 3 months is feasible in favourable- and intermediate- IMDC risk patients with asymptomatic mRCC.

Reference: Rini BI, et al. Lancet Oncol. 2016 Sep;17(9):1317-24. Active surveillance in metastatic renal-cell carcinoma: a prospective, phase 2 trial.

** Treatment with systemic therapy will be dependent on the stage of the pandemic within a particular region and the state/functionality of healthcare resources. Starting immune combination therapy has a significant chance of admission and/or steroid use[1]. Therefore there is uncertainty around increased complications of COVID-19 infection in this population. Starting treatment with VEGF-targeted therapy appears attractive as an alternative in some situations. It also negates the risk associated with IV infusions which are hospital based. Patients established on immune therapy may interrupt doses if the risk of breaking self-isolation is high. Patients on VEGF and immune combinations may have the immune therapy withheld for short periods during periods where the pandemic is not well controlled.

Reference: Motzer RJ, et al; CheckMate 214 Investigators. N Engl J Med. 2018 Apr 5;378(14):1277-1290. Nivolumab plus Ipilimumab versus Sunitinib in Advanced Renal-Cell Carcinoma.

*** Surgery for asymptomatic metastatic disease is controversial irrespective of the COVID-19 pandemic. There needs to be clear justification for this to occur. during the pandemic. Multidisciplinary team discussion is essential. Risk-benefit ratio is high without randomised data.

Follow-up of RCC				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis, loss of renal function) very unlikely if postponed 6 months	Clinical harm (progression, metastasis, loss of renal function) possible if postponed 3 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	1	3	3	3
COVID-recommendation	**Defer by 6 months**	**Follow-up before end of 3 months**	**Follow-up within < 6 weeks**	**Follow-up within < 24 h**
	All non-metastatic low- and intermediate risk RCC patients following radical nephrectomy, partial nephrectomy, thermal ablation or active surveillance[*,1,2]	• All non-metastatic high-risk RCC patients following radical nephrectomy and partial nephrectomy • All *asymptomatic* metastatic RCC patients who stopped medical therapy or those that have been on therapy for > 1 year[3] • Patients on systemic therapy/ or in adjuvant trials, preferably according to protocol	*Asymptomatic* metastatic RCC patients on systemic treatment	• Actively bleeding renal mass with *symptoms* after embolisation. • Any emergency treatment as above • *Symptomatic* metastatic RCC
*Prospective active surveillance studies and RECUR database analyses suggest that deferring follow-up in this group by 6 months is safe[1].				

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3. A retrospective study in 2012 suggests that 61% of patients who achieved a CR after VEGFR-TKI therapy and stopped medication were still in CR after a median follow-up of 255 days: Albiges L, et al. J Clin Oncol. 2012 Feb 10;30(5):482-7. Complete remission with tyrosine kinase inhibitors in renal cell carcinoma.

Abbreviations

AML = Angiomyolipoma; IMDC = International Metastatic RCC Database Consortium; ITU = intensive care Unit; LE = Oxford level of evidence; LE 1 = based on several prospective studies; LE 3 = based on retrospective cohort studies; mRCC = metastatic renal cell carcinoma; URS = ureterorenoscopy; IVC = inferior vena cava; TKI = tyrosine kinase. inhibitors; VEGF = vascular endothelial growth factor.

Supplementary Table 6: Recommendations from the EAU Testicular Cancer Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis and initial treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths likely if postponed > 6 weeks	Clinical harm (progression, metastasis) and cancer related deaths if postponed > 6 weeks or life-threatening situation
Level of evidence	2			2 - clinical principle
COVID-recommendation	**Defer by 6 months**	**Diagnose before end of 3 months**	**Diagnose within < 6 weeks**	**Diagnose within < 24 h**
	• Biopsy of the contralateral testis to patients with TC (testicular cancer) and at high-risk for contralateral germ cell neoplasia *in situ (if not done during contralateral orchidectomy)* • Sperm banking for those patients that do not need adjuvant, chemo or radiotherapy *(in patients scheduled for adjuvant treatment this should be done prior to starting treatment)* There is currently no evidence for vertical transmission of COVID-19. However, patients may be offered testing at their discretion at the time of performing standard serology (i.e. HIV/Hepatitis testing) prior to sperm cryopreservation.			• Bilateral testicular ultrasound (US) in all patients with suspicion of TC • Physical examination including supraclavicular, cervical, axillary and inguinal lymph nodes, breast and testicles • Serum tumour markers before and after orchiectomy taking into account half-life kinetics • Orchidectomy and pathological examination of the testis *(may be postponed 2-3 days)* • Contrast-enhanced CT scan (chest, abdomen and pelvis) in patients with a diagnosis of TC. In case of iodine allergy or other limiting factors perform

				abdominopelvic MRI *(may be postponed awaiting pathology result but no more than 7 days)* • Perform MRI of the brain (or brain CT if not available) in patients with multiple lung metastases, or high β-hCG values, or those in the poor-prognosis IGCCCG risk group *(can be postponed until CT lungs or marker results are available, then it is an emergency)*
Management of clinical Stage I testis cancer				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths likely if postponed > 6 weeks	Clinical harm (progression, metastasis) and cancer related deaths if postponed > 6 weeks or life-threatening situation
Level of Evidence	2		2	
COVID-recommendation	**Defer by 6 months**	**Treat before end of 3 months**	**Treat within < 6 weeks**	**Treat within < 24 h**
	Offer active surveillance (AS) to patients with seminoma and low/risk NGCT (LVI -) CSI *		• In patients with seminoma CSI, that do not accept AS treat with 1 course at AUC 7 of carboplatin** • In patients with low-risk NSGCT CSI not willing or unsuitable to undergo AS	

			treat with one cycle of BEP *(Treat with G-CSF and discuss in multidisciplinary team**)* • In LVI+ patients with CSI-NSCGT treat with one course of BEP if they are not willing to accept AS (*Treat with G-CSF and discuss in multidisciplinary team**)* • Primary nerve-sparing RPLND only in CSI - NSGCT patients with contraindication to adjuvant chemotherapy and unwilling to accept AS (LE 1b), or in those with teratoma with somatic-type malignancy	

* Active surveillance is the first choice of management in CSI testicular cancer during COVID-19.
** In spite of the lack of evidence on the association of bleomycin with severe lung COVID disease, bleomycin should be avoided when possible and hematopoietic growth factors (G-CSF) to diminish the incidence of neutropenia and infection should be offered to ALL patients with germ cell tumour (GCT) receiving chemotherapy.

Management of metastatic testis cancer				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis,) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths likely if postponed > 6 weeks	Clinical harm (progression, metastasis) and cancer related deaths if postponed > 6 weeks or life-threatening situation

Level of Evidence			2	1-2
COVID-recommendation	**Defer by 6 months**	**Treat before end of 3 months**	**Treat within < 6 weeks**	**Treat within < 24 h**
			• In clinical stage IIA seminoma offer radiotherapy or chemotherapy considering the risks of any option* • In stage IIA/B NSGCT without marker elevation, exclude marker negative embryonal carcinoma by obtaining histology by either RPLND or biopsy. If not possible, repeat staging after six weeks before making a final decision on further treatment (clinical principle) • Perform post-chemotherapy RPLND of residual masses after chemotherapy for NSGCT when serum levels of tumour markers are normal or normalising • Treat growing teratoma with RPLND	• Treat seminoma clinical stage IIB with chemotherapy according to good prognostic group (3x BEP); consider the radiotherapy as alternative depending on availability (LE 2) *(Patients in a good general condition may delay the initiation of treatment for 7 days*)* • Treat seminoma stage ≥ IIC with primary chemotherapy based on the same principles used for NSGCT (LE 2) *(Patients in a good general condition may delay the initiation of treatment for 7 days*)* • Treat low-volume NSGCT stage IIA/B with elevated markers like 'good- or intermediate-prognosis' advanced NSGCT, with 3 or 4 cycles BEP *(Patients in good general condition may delay the initiation of treatment for 7 days)*

				• In metastatic NSGCT with an intermediate prognosis, treat with 4 cycles of standard BEP *(Patients in a good general condition may delay the initiation of treatment for7 days*)* • In metastatic NSGCT with a poor prognosis, treat with one cycle of BEP (or PEI if poor lung function), followed by tumour marker assessment after 3 weeks* • In a life-threatening situation due to extensive metastasis, hospitalise and commence chemotherapy prior to orchidectomy (clinical principle)* • In patients with poor-risk, hospitalise and commence chemotherapy ± orchidectomy (clinical principle)*
* In spite of the lack of evidence on the association of bleomycin with severe lung COVID disease, bleomycin should be avoided when possible and hematopoietic growth factors (G-CSF) to diminish the incidence of neutropenia and infection should be offered to ALL patients with germ cell tumour (GCT) receiving chemotherapy.				
Follow-up of testis cancer				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**

Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis) and (cancer related) deaths likely if postponed > 6 weeks	Clinical harm (progression, metastasis) and cancer related deaths if postponed > 6 weeks or life-threatening situation
Level of Evidence		2	2	Clinical principle
COVID-recommendation	Defer by 6 months	Follow-up before end of 3 months	Follow-up within < 6 weeks	Follow-up within < 24 h
	Metastatic disease after adjuvant treatment or complete remission: do not postpone follow-up beyond 6 months of the original appointment (the mininum follow-up schedule is defined in the Guidelines)	• Seminoma CSI on AS or after adjuvant chemotherapy, do not postpone follow-up beyond 3 months of the original appointment (the mininum follow-up schedule is defined in the Guidelines) • In non-seminoma CSI on AS, do not postpone follow-up beyond 3 months of the original appointment (the mininum follow-up schedule is defined in the Guidelines) • Metastatic disease after adjuvant treatment or complete remission, do not postpone follow-up beyond 3 months of the original appointment (the mininum follow-up schedule is defined in the Guidelines)	• In seminoma CSI on AS or after adjuvant chemotherapy, do not postpone any follow-up beyond 6 weeks of the original appointment (the mininum follow-up schedule is defined in the Guidelines) • In non-seminoma CSI on AS, do not postpone follow-up beyond 6 weeks of the original appointment (the mininum follow-up schedule is defined in the Guidelines) • In metastatic disease after adjuvant treatment or complete remission, do not postpone follow-up beyond 6 weeks of the original appointment (the mininum follow-up	• Symptomatic brain metastases following treatment • Post-obstructive polyuria • Post-operative bleeding after RPLND after discharge and symptomatic lymphoceles / lymphascitis following RPLND • Uncontrollable pain or metastasis • Neutropenia during /after chemotherapy and sepsis during chemotherapy

			schedule is defined in the Guidelines)	
Abbreviations				
AS = active surveillance; AUC = area under curve*, BEP = cisplatin, etoposide, bleomycin; G-CSF = granulocyte colony-stimulating factor; CS = clinical stage; CT = computed tomography; GCT = germ cell tumour; IGCCCG = International Germ Cell Cancer Collaborative Group; LVI = lymphovascular invasion; MRI = magnetic resonance imaging; NSGCT = non-seminomatous germ cell tumour; PEI = cisplatin, etoposide and ifosfamide; RPLND = retroperitoneal lymph node dissection; TC = testis cancer.*				

Supplementary Table 7: Recommendations from the EAU Penile Cancer Guidelines applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3 months but unlikely	Clinical harm (progression, metastasis,) and (cancer related) deaths likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	1	1	3
COVID-recommendation	**Defer by 6 months**	**Diagnose before end of 3 months**	**Diagnose within < 6 weeks**	**Diagnose within < 24 h**
	Glans or penile shaft biopsies which appear clinically Tis cN0.	Glans or penile shaft biopsies if indicated for ≤ cT1 lesions without inguinal nodes (cN0)	Distant staging with CT if inguinal nodes appear clinically positive	Not applicable.
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis) very unlikely if postponed 6 months	Clinical harm (progression, metastasis) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, and (cancer related) deaths likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	1	3	3	3
COVID-recommendation	**Defer by 6 months**	**Treat before end of 3 months**	**Treat within < 6 weeks**	**Treat within < 24 h**
	• Adjuvant chemotherapy recommended in pN2/3 inguinal disease • Chemotherapy for distant metastatic disease. Consider best supportive care and	Tis: • Topical therapies (5FU/imiquimod) or ablative therapies or glans resurfacing, alternatively consider surveillance	≥ T1G3cN0: • Wide local excision (WLE)/Glansectomy +/- reconstruction If cT3: • Partial/total penectomy	• Best supportive care • Transfusion if needed • Relief of lower urinary tract obstruction

	palliation instead	T1 G1 cN0: • Circumcision/WLE • Ablative therapies • Glans resurfacing T1 G2 cN0: • T1 lesions – Circumcision/WLE • Ablative therapies • Glans resurfacing + Dynamic sentinel lymph node biopsy (DSNB)/modified iLND T4 disease or cN3: • Neo-adjuvant chemotherapy and surgery in responders or palliative deep X-ray therapy*	+ • DSNB/iLND but could be deferred for 3 months according to capacity If cN1-2: • Radical inguinal lymphadenectomy • Ipsilateral pelvic dissection if pN2/pN3 in ipsilateral inguinal basin	Metastatic disease: • Excruciating pain • Spinal compression
*Consider that this therapy might be palliative which may need downgrading to low priority in extremely constraint circumstances.				
Follow-up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (progression, metastasis, loss of renal function) very unlikely if postponed 6 months	Clinical harm (progression, metastasis, loss of renal function) possible if postponed 3-4 months but unlikely	Clinical harm (progression, metastasis, anaemia related complications) and (cancer related) deaths very likely if postponed > 6 weeks	Life-threatening situation or opioid-dependent pain
Level of evidence	3	3	3	3
COVID-recommendation	**Defer by 6 months**	**Defer by 3 months**	**Follow-up within < 6 weeks**	**Follow-up within < 24 h**
	For low risk (node negative) disease, remote review/self-examination is recommended for the duration of the outbreak	For high risk (node positive), perform cross sectional imaging every 3 months		Not applicable

Abbreviations
DSNB = dynamic sentinel lymph node biopsy; 5-FU = 5-fluorouracil; iLND = inguinal lymphadenectomy; WLE = wide local excision.

Supplementary Table 8: Recommendations from the EAU Management of Non-neurogenic Male LUTS Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
	• Diagnostic evaluation of new patients with LUTS		• Suspected Renal Impairment • Suspected oncological causes of LUTS	
Level of evidence	Expert advice		Expert advice	
COVID-recommendation	Defer - Remote assessment may be possible depending on local resources and capacity.		Prioritise the investigation of LUTS when renal impairment and/or oncological causes are suspected.	
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
	• Conservative and pharmacological management of new patients with LUTS • Surgical Management of male LUTS	• Surgical Management of patients with urinary retention		
Level of evidence	Expert advice	Expert advice		
COVID-recommendation	If capacity allows then continue conservative and	Prioritise patients in retention as there is a significant risk of		

	pharmacological management of male LUTS including nocturia, as normal. Prolong the use of conservative and pharmacological management options where possible until after the outbreak has been controlled. In the interim period use 5α-reductase inhibitors (5-ARIs) as monotherapy or in combination in men who have moderate-to-severe LUTS and an increased risk of disease progression. Delay initiation of desmopressin for the management of nocturia due to nocturnal polyuria where possible to avoid need for resource heavy follow-up. Delay surgical management of patients with moderate-to-severe LUTS depending on local resources and capacity.	infection due to the presence of a catheter and the need to attend hospital for regular changing of the catheter. Alternatively instruct patients to do clean intermittent catheterisation.		
Follow up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation

Follow-up	• Patients under treatment who had at least one FU visit before	• Patients who have recently begun medical treatment and had no previous FU visit	• Patients who are taking desmopressin	• Patients who have begun taking desmopressin
Level of evidence	Expert advice		Expert advice	Expert advice
COVID-recommendation	Defer follow-up of patients under treatment who had at least one FU visit before Remote follow up may be possible depending on local resources and capacity.	Assess treatment efficacy and safety in patients who have recently begun medical treatment and had no previous FU visit Remote follow up may be possible depending on local resources and capacity.	Follow-up patients receiving desmopressin for serum sodium measurement. This can be done in primary care where possible.	In patients who have begun taking desmopressin, measure serum sodium concentration at day three and seven and after one month.
General considerations				
1) If capacity allows then remote consultations can proceed utilising all of the current recommendations. 2) Symptom scores and bladder diaries can be (e)-mailed out to patients. 3) Urodynamic investigation should be deferred. 4) If capacity allows then resources from primary care can be used.				

Supplementary Table 9: Recommendations from the EAU Urinary Incontinence Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
Diagnostic Evaluation	• Investigation of urinary incontinence in the non-neuropathic patient. • Exclude urinary tract infection (UTI) as a cause of *de novo* urinary incontinence. .		• Suspected oncological causes of urinary incontinence.	
Level of evidence	Expert advice		Expert advice	
COVID-recommendation	Defer - Exclusion of UTI could be done in primary care if capacity allows.		Prioritise investigation of suspected cancer e.g. malignant urinary tract fistula.	
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
Conservative management	• Lifestyle modification and fluid management. • Management of associated conditions. • Provision of containment products. • Pelvic Floor Muscle Training. • Electrical / Magnetic Stimulation.			

Level of evidence	Expert advice			
COVID-recommendation	Defer - If capacity allows then written information can be given to patients or advice given to primary care colleagues regarding medication adjustment, bowel management, provision of containment products, weight loss, fluid management, prompted voiding and bladder training.			
Pharmacotherapy	• Pharmacotherapy for urge urinary incontinence or stress urinary incontinence. • Pharmacotherapy for post-prostatectomy incontinence. • Review of medication efficacy.			
Level of evidence	Expert advice			
COVID-recommendation	Defer - If capacity allows for remote symptom assessment and pharmacotherapy is felt to be appropriate then advice regarding prescribing can be given to primary care colleagues. Do not recommend pharmacological treatments that require monitoring e.g. Desmopressin**.**			
Surgical Treatment	• Surgical treatment of stress urinary incontinence or stress		• Surgical treatment of urinary tract fistulae where	

	predominant mixed incontinence. • Surgical treatment of urge urinary incontinence or urge predominant mixed Incontinence. • Surgical treatment of urethral diverticula. • Surgical treatment of post-prostatectomy incontinence. • Surgical treatment of non-obstetric urinary tract fistulae.		oncological treatment such as systemic chemotherapy or intra-cavity radiotherapy can only proceed if fistula is closed.	
Level of evidence	Expert advice			
COVID-recommendation	Defer		Consider early fistula repair on a case-by-case basis	
Follow up				
	Low Priority	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
	• Follow-up of patients with Urinary Incontinence.		• Patients who are taking desmopressin.	• Patients who have recently commenced taking desmopressin.
Level of evidence	Expert advice		Expert advice	Expert advice
COVID-recommendation	Defer		Follow-up patients receiving desmopressin for serum sodium measurement. This can be done in primary care where possible.	In patients who have begun taking desmopressin, measure serum sodium concentration at day three and seven and after one month
General Considerations				
1) If capacity allows then remote consultations can proceed utilising all of the current recommendations.				

2) Symptom scores and bladder diaries can be (e)-mailed out to patients.
3) Urodynamic investigation including uroflowmetry, cystometrogram, pressure-flow studies and supplementary investigations such as pad testing should be deferred.
4) Imaging of the urinary tract is not recommended in the evaluation of patients with incontinence.
5) If capacity allows then resources from primary care can be used such as for monitoring of blood tests.
6) Remote follow-up of existing patients with urinary incontinence is recommended only if capacity allows.

Supplementary Table 10: Recommendations from the EAU Neuro-urology Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
	• Imaging		• Suspected Progressive Renal Impairment	• Suspected Sepsis
Level of evidence	Expert advice		Expert advice	Expert advice
COVID-recommendation	All routine investigations including blood tests and ultrasound scans should be postponed EXCEPT where they need to be undertaken for patients with urosepsis requiring hospitalisation or in patients going into renal failure.		Prioritise the investigation and treatment – assess on a case-by-case basis.	Emergency treatment according to local sepsis protocols.
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
	• Medical Treatment • Invasive procedures			• Blocked catheter

	• Surgical treatment			
Level of evidence	Expert advice	Expert advice		Expert advice
COVID-recommendation	Defer hospital attendance. Adjustments to medications may be carried out via telephone or video consultation All routine invasive procedures should be postponed including urodynamic studies All elective surgical treatment should be postponed. These patients should be managed with medications and other therapies including catheterisation for the duration of the pandemic.			Instruction in catheter unblocking to patients and their relatives may be considered; however, patients who have blocked catheters must be seen and managed on an urgent basis to avoid potentially serious complications like autonomic dysreflexia.
Follow up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
	• Hospital Follow-up			
Level of evidence	Expert advice			
COVID-recommendation	Defer - Telephone clinics should be undertaken to try to pick up any serious issues ensuring that			

	only the patients who need urgent attention are brought to the hospital.			
General considerations				
The aim is to keep neuro-urological patients out of the hospital environment as much as possible. A significant proportion would be considered as a high-risk group in the current circumstances. However, virtual clinics could be undertaken to pick up urgent issues and allow them to be dealt with in the most safe and effective manner. It is imperative to follow the local protocols and guidelines in the context of locally available resources.				

Supplementary Table 11: Recommendations from the EAU Renal Transplantation Guidelines Panel applicable during the COVID-19 pandemic

Renal Transplantation				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
	• Non-urgent renal transplantation with living donor • Renal transplantations with complex medical, surgical and immunological situations (e.g. desensitisation protocols, presence of donor specific antibodies), that require increased resource use, prolonged hospital stay, and/or more intense immunosuppression (e.g. Anti-thymocyte globulin [ATG] induction).	• Standard candidate to renal transplantation with expected long waiting time with deceased donor e.g. having a perfect full match kidney offered.	• Combined transplants (Heart and kidney, Liver and Kidney).	• Urgent dialysis-access problems
Level of evidence	Expert advice	Expert advice	Expert advice	Expert advice
COVID-recommendation	Defer	Case-by-case discussion	Perform Renal transplantation	Perform renal Transplantation
General considerations for renal transplantation in individual centres				
1) The Global System situation and recommendations (e.g. WHO, Euro-Transplant recommendations). 2) The National System situation and recommendations for renal transplantation. 3) The Local Health Care System situation and recommendations renal transplantation.				

4) A high level and complex interdisciplinary integrated system is required for successful kidney transplantation. Resources needed for renal transplantation may take away resources (e.g. blood units, emergency ORs, health care personnel) from other emergency situations both at the time of renal transplantation and over the following days and weeks after renal transplantation.
5) Important complex consent issues exist for renal transplantation in the era of COVID-19. This applies to both transplant recipients and potential living donors and must be fully explored and carefully documented.
6) For renal transplantation continue to use standard immunosuppression according to guidelines, try to avoid experimental or very potent immunosuppression such as ATG.

Testing of donor's for SARS-CoV-2

No clear recommendation can be stated on the necessity to test a potential organ donor for SARS-CoV-2; however, the Panel have reached consensus on the following statements:

1) Evaluation of the risk of exposure to SARS-CoV-2: medical history and potential contacts with people with proven COVID-19 over the last 28 days.
2) One negative nucleic acid test (NAT) for the identification of SARS-CoV-2 performed on a naso- and oropharyngeal swab. If the risk analysis favours organ retrieval and SARS-CoV-2 NAT is negative, then organ retrieval can be done according to local guidelines and regulations.
3) If NAT for SARS-CoV-2 is positive then patient and medical staff should be informed of infectious risk and the kidney be possibly discarded.

Follow up

Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm (decrease in renal function, rejection, loss of renal transplant, death) very unlikely if postponed 6 months	Clinical harm (decrease in renal function, rejection, loss of renal transplant, death) is possible as recipients are extremely vulnerable	Clinical harm (loss of renal function, loss of renal transplant, rejection, death) very likely if postponed	Life and/or renal transplant threatening situation
Level of evidence	Expert advice	Expert advice	Expert advice	Expert Advice
COVID-recommendation	Defer by 6 months	Consultation based on a case by case discussion	Hospitalisation in emergency	Hospitalisation in emergency
	For all stable patients with overall good general health and stable renal transplant function: • Visits to hospital should be minimised and possibly spaced or postponed. Telephone	Renal transplant recipients with suspected COVID-19. • Renal transplanted patients with fever and/or COVID-19 symptoms should call their appropriately	For surgical or immunological complications of renal transplant: • The safest, fastest and most minimally invasive appropriate treatment should be performed	Life threatening situations (e.g. fungal transplant renal artery aneurysm) should follow standard of care treatment pathways.

	and video consultations are instead recommended. • Continue to use standard immunosuppression according to established protocols.	designated hospital and avoid general emergency units where possible.	(e.g. nephrostomy tube placement instead of ureteral re-implantation), allowing postponement of definitive treatment to later date post-COVID-19. • In case of suspected graft rejection, diagnosis and treatment should follow current standard guidelines, a graft biopsy is deemed safe in case of suspected acute rejection in order to make correct diagnosis before intensifying immunosuppression.	

Supplementary Table 12: Recommendations from the EAU Urolithiasis Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Acute flank pain - Imaging			Ultrasound (US) followed by non-contrast enhanced computer tomography (NCCT) weighting clinical situation and US findings; alternative Kidney-Ureter-Bladder (KUB) radiography (in known radiopaque stone formers).	• US, followed by NCCT with fever, suspected urosepsis or solitary kidney, and when diagnosis is doubtful. • When uncertain cause Thorax/Abdomen/Pelvic computed tomography scan (to rule out Covid-19 pneumonia at the same time).
Acute flank pain - Laboratory examinations			• Spot urine dipstick, infection possible → urinary culture. • Blood tests depending on clinical situation and imaging findings.	• Spot urine dipstick-test and urine culture. • With fever basic blood test incl. coagulation-test. • Covid-19 swap or screening (as per local / national requirements)
Suspected asymptomatic renal stone (US) - Imaging	Small stone/lower pole: NCCT / Kidney-Ureter-Bladder radiography, and/or contrast study if stone removal is planned.	Large stone burden, risk of obstruction or with dilatation at US: NCCT.		

Metabolic evaluation	Perform stone analysis in first-time stone formers using a valid procedure. Postpone complete metabolic evaluation.			
General considerations				
Any diagnostic measures with low or intermediate priority must be balanced with the potential therapeutic consequence and risk of Covid-19 transmission.				
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed > 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Sepsis due to obstructing stones, anuria				Urgent decompression of the collecting system (PCN or stent*).
Renal insufficiency (renal failure, bilateral obstruction, solitary kidney).				Urgent decompression or endourologic stone removal.
Acute flank pain				Pain relief (see general considerations below).
Obstructing / symptomatic ureteral stone not suitable for MET			Interventional treatment (i*n situ* - SWL, URS or decompression*).	
Non-obstructing ureteral stone		• Medical expulsive therapy. • Interventional stone removal or JJ placement.		
Renal stones causing intermittent obstruction		Interventional stone removal or JJ placement.		
Renal stone with recurrent infection and obstruction,			First decompression, than interventional stone removal	

partial or complete staghorn stones			as early as possible.	
Others, asymptomatic / oligosymptomatic renal stones	Interventional stone removal.			
Indwelling DJ-stent due to stone	No/low JJ morbidity: Interventional stone removal as soon as situation allows.	Pain/Symptoms due to JJ: patients should receive higher priority.		

Notes

*Choice of decompression must include consideration of the possibilities for outside procedures or at bedside, with use of local anaesthesia thus avoiding the necessity of admission to the ward and involvement of an anaesthetist, sparing ventilators AND considerations on future therapeutic time lines for definitive stone treatment during pandemic. Stents might be preferred due to high risk of accidently removing/dislodging a pcN and possible long-wait until definitive stone treatment can be carried out. In the short-term, preferably use stents with a string for self-removal in order to reduce outpatient visits.

General considerations

Acute treatment of a patient with renal colic

1) In principle, the same considerations as mentioned in the EAU-Guidelines on Urolithiasis apply, in particular immediate pain relief in patients with an acute stone episode. However, some evidence exists of a link between NSAIDs (Ibuprofen) and both respiratory and cardiovascular adverse effects in several settings, but so far the causality remains unclear. However, the WHO has recommended to avoid the application of ibuprofen when possible. Metamizol seems to be a good alternative in acute renal colic [1, 2].
2) Renal decompression in case of analgesic refractory colic pain or threatening urosepsis are emergency procedures and shall be performed as soon as the local situation allows [3].

Medical expulsive therapy (MET) and Chemolysis

3) In the situation of an infectious pandemic like SARS CoV2 these therapeutic options become more important as a potential way of avoiding surgical interventions.

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3. Stensland K, Morgan T, Moinzadeh A, Lee C, Briganti A, Catto J, et al. Considerations in the Triage of Urologic Surgeries During the COVID-

Supplementary Table 13: Recommendations from the EAU Urological Infections Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Uncomplicated Cystitis	Telephone/electronic consultation for case history.			
Urethritis	Telephone/electronic consultation for case history.			
Level of evidence	Expert advice			
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Uncomplicated Cystitis	Antibiotics after urology consultation.			
Uncomplicated Pyelonephritis	Antibiotics after urology consultation.			
Complicated UTIs			Antibiotics after urology consultation. Inpatient treatment when necessary.	
Acute epididymitis	Antibiotics after urology consultation.			
Urethritis	Antibiotics after urology consultation.			
Acute bacterial	Mild: Antibiotics after		Severe: Intravenous antibiotics;	

prostatitis	urology consultation.		suprapubic catheter if residual urine/obstructive.	
Urosepsis				Patient with suspicion of urosepsis are to be referred to the nearest hospital and immediate management according to cause and symptoms.
Fournier's gangrene				Surgical debridement and intravenous antibiotic treatment; IMC if necessary.
Level of evidence	Expert advice		Expert advice	Expert advice
Follow up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
	Telephone and video consultations or electronic communication. Only patients who need urgent attention brought to the hospital.			
Level of evidence	Expert advice			
General considerations				

1) As many uncomplicated UTIs (e.g., uncomplicated cystitis, uncomplicated UTI or recurrent UTI etc.) will self-resolve within a short time with or without appropriate antimicrobial treatment, it is recommended to utilize as much as possible the use of telemedicine, video conferencing or voice call interview. Patients for which a urine sample (for urine culture or other analysis) must be taken or patients with additional risk factors should be given priority.
2) Most urological infections do not require surgery; however, in cases of obstructive disease linked to an infection, for example, some interventions may be required. In these cases, it is recommended that all procedures should be preferably performed by experienced urologists, outside of their learning

curve. Procedures should be performed with the minimum number of staff members.

3) The duration and frequency of shedding of SARS-CoV-2 in urine is unknown. Although no evidence of disease transmission through urine has been demonstrated urine sampling (for urine culture, dipsticks and other analyses), urethral catheterisation and endoscopic procedures (e.g., TURP, TURB, ureteral stenting, etc.) should be executed with caution.

Supplementary Table 14: Recommendations from the EAU Sexual and Reproductive Health Guidelines Panel applicable during the COVID-19 pandemic

General Statement				
Management (diagnosis, treatment and follow up) of Sexual Health/Erectile Dysfunction in the COVID-19 period is of low priority, with the exception of the following recommendations.				
Diagnosis				
Priority Category	**LOW PRIORITY**	**INTERMEDIATE PRIORITY**	**HIGH PRIORITY**	**EMERGENCY**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Evaluation of late-onset hypogonadism (LOH)		All diagnosis of LOH except for testosterone therapy trial which is low priority.		
Erectile dysfunction			• Medical and psychosexual history (use of validated instruments, e.g. IIEF). • Take a comprehensive medical and sexual history in every patient presenting for erectile dysfunction (ED). Consider psychosexual development, including life stressors, cultural aspects, and cognitive/thinking style of the patient regarding their sexual performance.	
Evaluation of male infertility		• Investigate both partners simultaneously to categorise		A multidisciplinary team discussion concerning

		the cause of infertility. • Include a parallel assessment of the fertility status, including ovarian reserve, of the female partner during the diagnosis and management of the infertile male, since this might determine decision making in terms of timing and therapeutic strategies (e.g., assisted reproductive technology (ART) versus surgical intervention). • Perform semen analyses according to the WHO Laboratory Manual for the Examination and Processing of Human Semen (5th edn) indications and reference criteria. • Perform scrotal ultrasound (US) in patients with infertility, as there is a higher risk of testis cancer.		invasive diagnostic modalities (e.g., US-guided testis biopsy with frozen section versus radical orchidectomy versus surveillance) should be considered in infertile men with US-detected indeterminate testicular lesions, especially if additional risk factors for malignancy are present.
Low Sexual Desire			Perform the diagnosis and classification of low sexual desire based on medical and sexual history, which could include validated questionnaires.	
Treatment				
Priority Category	**LOW PRIORITY**	**INTERMEDIATE PRIORITY**	**HIGH PRIORITY**	**EMERGENCY**

Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Late-onset hypogonadism			• Use conventional medical therapies for treating severe depressive symptoms and osteoporosis. • Do not use testosterone therapy to improve body composition, reduce weight and benefit cardio-metabolic profile. • Do not use testosterone therapy for improving cognition vitality and physical strength in aging men.	
Late-onset hypogonadism choice of treatment		• Treat, when indicated, organic causes of hypogonadism (e.g., pituitary masses, hyperprolactinaemia, etc). • Improve lifestyle and reduce weight (e.g., obesity); withdraw, when possible, concomitant drugs which can impair testosterone production; treat comorbidities before starting testosterone therapy. • Select the testosterone		

		preparation in a joint decision process, only with a fully informed patient.		
Erectile dysfunction		• Assess all patients for inadequate/incorrect information about the mechanism of action and the ways in which drugs should be taken, as they are the main causes of a lack of response to phosphodiesterase type 5 inhibitors (PDE5Is.) • Treat a curable cause of ED first, when found. • Use PDE5Is as first-line therapeutic options. • Pro-erectile treatments should start at the earliest opportunity after radical prostatectomy/ pelvic surgery and other curative treatments for prostate cancer.	Discuss with patients undergoing radical prostatectomy (any technique) about the risk of sexual changes other than ED, including libido reduction, changes in orgasm, anejaculation, Peyronie's like disease and penile size changes.	
Recurrent haemospermia		Men > 40 years of age with persistent haemospermia should be screened for prostate cancer.		
Peyronie's disease		• Offer conservative treatment to patients not fit for surgery or when surgery is not acceptable to the patient.	Do not offer oral treatment with vitamin E, potassium para-aminobenzoate (potaba), tamoxifen, pentoxifiline, colchicine and acetyl esters of	

		• Discuss with patients all the available treatment options and expected results before starting any treatment. • Nonsteroidal anti-inflammatory drugs (NSAIDs) can be used to treat penile pain in the acute phase of PD. • Phosphodiesterase type 5 inhibitors can be used to treat concomitant ED or if the deformity results in difficulty in penetrative intercourse in order to optimise penetration.	carnitine to treat Peyronie's disease.	
Cryptorchidism		Men with unilateral undescended testis and normal hormonal function/spermatogenesis should be offered orchidectomy.		
Germ cell malignancy and testicular microcalcification			• Men with testicular microcalcification should learn to perform self-examination even without additional risk factors, as this may result in early detection of testicular germ cell tumour. • Sperm cryopreservation should be performed prior to planned orchidectomy,	If there are suspicious findings on physical examination or ultrasound in patients with testicular microcalcification with associated lesions, perform inguinal surgical exploration with testicular biopsy or offer orchidectomy

			since men with testis cancer may have significant semen abnormalities (including azoospermia). • Men with testis cancer and azoospermia or severe abnormalities in their semen parameters may be offered onco-testicular sperm extraction at the time of radical orchidectomy.	after multidisciplinary meeting and discussion with the patient.
Hormonal Therapy		• Hypogonadotropic hypogonadism (secondary hypogonadism), including congenital causes, should be treated with combined human chorionic gonadotropin (hCG) and follicle stimulating hormone (FSH) (recombinant FSH; highly purified FSH) or pulsed Gonadotropin releasing hormone (GnRH) via pump therapy to stimulate spermatogenesis. • In men with hypogonadotropic hypogonadism, induce spermatogenesis by an effective drug therapy (hCG; human menopausal gonadotropins; recombinant FSH; highly purified FSH).		Do not use testosterone therapy for the treatment of male infertility.

		• In the presence of hyperprolactinaemia dopamine agonist therapy may improve spermatogenesis.		
Male fertility surgery	All elective surgical sperm retrieval and fertility procedures should be cancelled until further notice.		Women who have limited ovarian reserve or are of advanced maternal age, a delay in fertility intervention may result in significantly poorer outcomes and a full discussion with the couple needs to take place highlighting this.	
Sperm cryopreservation in men with testis cancer since they may have significant semen abnormalities (including azoospermia).	Sperm banking: Low Priority (in patients receiving adjuvant treatment, but should be performed before any gonadotoxic or ablative therapy. There is currently no evidence for vertical transmission of COVID 19. However, patients may be offered testing at their discretion at the time of performing standard serology (ie HIV/Hepatitis testing) prior to sperm cryopreservation.			Prior to planned orchidectomy.
Onco-testicular sperm extraction in men with testis cancer and azoospermia or severe abnormalities in their				At the time of radical orchidectomy.

semen parameters				
Follow up				
Priority Category	**LOW PRIORITY**	**INTERMEDIATE PRIORITY**	**HIGH PRIORITY**	**EMERGENCY**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Late-onset hypogonadism			• Assess for cardiovascular risk factors before commencing testosterone therapy. • Assess men with known cardiovascular disease (CVD) for cardiovascular symptoms before testosterone therapy and with close clinical assessment and evaluation during treatment. • Treat men with hypogonadism and pre-existing CVD, venous-thromboembolism or chronic cardiac failure, who require testosterone therapy with caution, by careful clinical monitoring and regular measurement of haematocrit (not exceeding 54%) and testosterone levels. • Exclude a family history of venous-thromboembolism	

			before commencing testosterone therapy. • Monitor testosterone, haematocrit at three, six and twelve months after testosterone therapy initiation, and thereafter annually. A haematocrit more than 54% should require testosterone therapy withdrawal and phlebotomy. Reintroduce a lower dose once the haematocrit has normalised and consider switching to topical testosterone therapy at testosterone preparations.	

Supplementary Table 15: Recommendations from the EAU/ESPU Paediatric Urology Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis and outpatient clinics for paediatric urology cases				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendation	Benign scrotal and penile pathology, incontinence.	Semi-urgent cases like initial post-operative ultrasound after upper tract surgery.	Urgent cases in which delay may cause irreversible progression or organ damage: includes ultrasound, VCUG in suspected severely obstructed uropathy where surgery is still considered.	Continue all care in which delay is potentially organ threatening or life threatening.
Post-operative follow up schedule after surgery				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendation	**Follow-up by 6 months**	**Follow-up before end of 3 months**	**Follow-up within < 6 weeks**	**Follow-up within < 24 h**
	Orchidopexy, hydrocele, hypospadias, circumcision, inguinal hernia, buried penis, urolithiasis if no obstruction or infection.	Any kind of anti-reflux surgery, pyeloplasty, incontinence surgery if bladder emptying is working.	• Pyeloplasty with possible loss of function. • Recurrent UTI after anti-reflux surgery. • Incontinence surgery with bladder emptying problems.	• Macroscopic hematuria after trauma. • Inguinal hernia repair with onset of scrotal pain. • Suspected bowel obstruction or intestinal perforation in conjunction with

				bladder augmentation. • Urolithiasis with signs of sepsis and/or obstruction. • PUV with urinary retention. • Local wound infection or abscess formation after any kind of surgery. • Febrile UTI/uroseptical signs after any kind of surgery.
Surgical procedures for paediatric urology cases				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendation	**Defer by 6 months**	**Treat before end of 3 months Perform surgery that is semi-urgent.**	**Treat within < 6 weeks Perform surgery for urgent cases in which delay will cause irreversible progression of disease or organ damage.**	**Treat within < 24 h Perform surgery in cases of organ threatening of life threatening disease.**
	• Benign scrotal and penile surgery (orchidopexy, hydrocele, inguinal hernia, circumcision). • Functional surgery (incontinence surgery, meatotomy, botulinum toxin injections).	• Surgery for VUR (open re-implant and bulk injection). • Pyeloplasty if no loss of function. • Urolithiasis if no infection or obstruction.	• Pyeloplasty in UPJ obstruction with progressive loss of function or severe symptoms (consider drainage with JJ of nephrostomy). • PUV.	• Urosepsis with obstruction (urolithiasis, ureterocele with obstruction or POM). • Trauma with haemodynamic instability or urinoma formation.

	• Genital reconstructive surgery (hypospadias, buried penis, other genital abnormalities). • Benign (Hemi)Nephrectomy. • Bladder augmentation, catheterisable stoma, appendicocoecostomy due to the high and prolonged impact on patients and resources. • Bladder exstrophy correction depending on age and local situation.	• Botulinum toxin injections for neurogenic bladder only in selected cases.	• POM with progressive loss of function. • Urolithiasis with recurrent infections.	• PUV if urethral or suprapubic catheter cannot be placed. • Oncology (Wilms, malignant testicular/ paratesticular tumours, RMS of bladder and prostate, resection may be considered depending on local situation and condition of child). • Acute ischemia (testicular torsion – in neonates not exploring is an option due to low chance to salvage testis, very low risk of metachronous contralateral torsion and increased vulnerability of these patients). • Paraphimosis.
General considerations				
1) While most children themselves may not be severely ill with COVID-19, this pandemic will impact paediatric urological care. Careful decision must be made on what care requires postponement and what care is essential to be continued. 2) Depending on the resources and capacity we recommend to only treat high-priority and emergency cases surgically during the COVID-19 pandemic. 3) Consider treating intermediate-priority patients if capacity is available, but not during the COVID-19 surge. 4) It is important to note that postponing surgery in patients with obstructive uropathy (UPJ-, UVJ-obstruction, PUV, neurogenic bladder) may lead to loss of renal function and the decision to postpone may be revised depending on the duration of the local situation as well as the severity of the obstruction in the individual case. Temporary drainage methods may be considered to bridge definitive surgery.				

5) Undoubtedly there will be cases of congenital abnormalities where the optimal surgical time point will be surpassed, such as hypospadias and cryptorchidism. These children may be at risk for suboptimal outcome or increased psychological burden due to delayed surgery and should be prioritised in the long waiting list.

Abbreviations

PUV = posterior urethral valves; POM = primary obstructive megaureter; UPJ = ureteropelvic junction; VCUG = voiding cystourethrogram; VUR = vesicoureteral reflux; UVJ = ureterovesical junction; and UTI = urinary tract infection.

Supplementary Table 16: Recommendations from the EAU Chronic Pelvic Pain Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendation				
	All diagnostic procedures and recommendations for Chronic Pelvic Pain are deemed low priority			
Treatment				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
COVID-recommendations				
Prostate Pain Syndrome	• Offer multimodal and phenotypically directed treatment options for Prostate Pain Syndrome (PPS). • Offer high-dose oral pentosane polysulphate in PPS. • Offer acupuncture for use in PPS.	• Use antimicrobial therapy (quinolones or tetracyclines) over a minimum of six weeks in treatment-naïve patients with a duration of PPS less than one year. • Use α-blockers for patients with a duration of PPS less than one year. • Offer non-steroidal anti-inflammatory drugs in PPS, but long-term side-effects have to be considered.		
Bladder Pain Syndrome	• Offer subtype and phenotype-oriented therapy for the treatment of Bladder Pain Syndrome (BPS).	• Administer amitriptyline for treatment of BPS. • Offer transurethral resection (or		

	• Always consider offering multimodal behavioural, physical and psychological techniques alongside oral or invasive treatments of BPS. • Offer oral pentosane polysulphate for the treatment of BPS. • Offer oral pentosane polysulphate plus subcutaneous heparin in low responders to pentosane polysulphate alone. • Offer intravesical hyaluronic acid or chondroitin sulphate before more invasive measures. • Offer intravesical lidocaine plus sodium bicarbonate prior to more invasive methods. • Offer intravesical heparin before more invasive measures alone or in combination treatment. • Offer submucosal bladder wall and trigonal injection of botulinum toxin type A (BTX-A) plus hydrodistension if intravesical instillation therapies have failed. • Offer neuromodulation before more invasive interventions. • Only undertake ablative organ surgery as the last resort and only by	coagulation or laser) of bladder lesions, but in BPS type 3 C only.		

	experienced and BPS-knowledgeable surgeons.			
Scrotal Pain Syndrome	• Do open instead of laparoscopic inguinal hernia repair, to reduce the risk of scrotal pain. • In patients with testicular pain improving after spermatic block, offer microsurgical denervation of the spermatic cord.			
Gynaecological Aspects of CPP	• Involve a gynaecologist to provide therapeutic options such as hormonal therapy or surgery in well-defined disease states. • Provide a multidisciplinary approach to pain management in persistent disease states.			
Functional Anorectal Pain	• Undertake biofeedback treatment in patients with chronic anal pain. • Offer Botulinum toxin type A and electrogalvanic stimulation in chronic anal pain syndrome. • Offer percutaneous tibial nerve stimulation in chronic anal pain syndrome. • Offer sacral neuromodulation in chronic anal pain syndrome. • Offer inhaled salbutamol in intermittent chronic anal pain			

	syndrome.			
Sexological Aspects in CPP	• Offer behavioural strategies to the patient and his/her partner to reduce sexual dysfunctions. • Offer pelvic floor muscle therapy as part of the treatment plan to improve quality of life and sexual function.			
Psychological Aspects of CPP	• For CPP with significant psychological distress, refer patient for CPP-focused psychological treatment.			
Pelvic Floor Dysfunction	• Apply myofascial treatment as first-line treatment. • Offer biofeedback as therapy adjuvant to muscle exercises, in patients with anal pain due to an overactive pelvic floor.			
Management of Chronic/Non-acute Urogenital Pain by Opioids	• Prescribe opioid treatment, following multidisciplinary assessment and only after other reasonable treatments have been tried and failed.			

Supplementary Table 17: Recommendations from the EAU Urological Trauma Guidelines Panel applicable during the COVID-19 pandemic

Diagnosis, Treatment and Follow up				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
Renal Trauma COVID-recommendations				
	Stable patients with Grade 1 and 2 injuries should be managed conservatively and not be admitted to hospital at all if possible.	Stable Patients with Grade 3-4 injuries should be managed conservatively with a view for early discharge if possible.		• A high-grade renal injury with active bleeding in a haemodynamically-stable patient should be managed with selective angio-embolisation if available. • Patients with high-grade injuries and persistent haemodynamically instability should have urgent surgical exploration plus nephrectomy.
Level of evidence	3	3		3
General considerations renal trauma				
Surgical exploration requires OR facility, but might allow for a quicker discharge from ICU, while angio-embolisation needs close observation usually at ICU with risk of recurrence and exploration. A tailored approach should be used. Complete embolisation of the kidney in this crisis situation is a valid option and may reduce ICU demand.				
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
Ureteral Trauma COVID-recommendation				
			• In case of ureteric injuries,	

			only urinary diversion is essential in the acute setting. • Nephrostomy should be preferred above JJ-stent as it avoids general anesthesia and an operation theatre. If a JJ-stent can be inserted with x-ray guidance outside the OR, it is a valid option mainly for females. • Reconstructive procedures can be postponed.	
Level of evidence			3	
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
Bladder Trauma COVID-recommendation				
	Conservative: Extra-peritoneal or small iatrogenic intra-peritoneal lesion.			Immediate surgical exploration and repair: Intra-peritoneal bladder ruptures by blunt trauma, and any type of bladder injury by penetrating trauma.
Level of evidence	3			3
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
Urethral Trauma COVID-recommendations				

	• A urethral injury should be managed by transurethral or suprapubic urinary diversion. • Deferred (at least three months) urethroplasty is advisable, while early urethroplasty (two days to six weeks) or early endoscopic re-alignment have low-priority.		Female PFUI (pelvic fracture urethral injury) should be repaired early within 7 days (high priority).	
Level of evidence	2a-3		3	
Priority category	**Low Priority**	**Intermediate Priority**	**High priority**	**Emergency**
Definition	Clinical harm very unlikely if postponed 6 months	Clinical harm possible if postponed 3-4 months but unlikely	Clinical harm very likely if postponed > 6 weeks	Life threatening situation
Genital trauma COVID-recommendations				
	Conservative: non-penetrating injuries without signs of ruptures.		Testicular injury with tunical rupture, penile fracture, and penetrating genital injury are all organ-threatening and should be managed surgically with high-priority.	
Level of evidence			3	
General considerations				
In “regular” trauma situations, damage control principles are followed in order to stabilise the patient and delay definitive procedures until the patient is in a better physiological state. In mass casualties event, such as the current SARS-CoV-2 pandemic, when health system demands exceed its resources, we can use the same principles to postpone non-urgent procedures until better times. A nephrostomy tube, for example, can drain an obstructed kidney even for a few months until reconstructive surgery is planned. One must be mindful that at present we have no indication of when the SARS CoV2 pandemic will be resolved so such patients should be clearly informed on the mechanisms to urgently contact the health care systems in case of an emergency (direct phone numbers and email addresses).				

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