

Global challenges to urology practice during the COVID-19 pandemic

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Since the first report of coronavirus disease 2019 (COVID-19) in China, it has progressed into a pandemic [1], and Italy has been one of the countries that has been worst hit.

Coronaviruses are enveloped RNA viruses that cause respiratory, entero-hepatic, and neurological diseases in humans and mammals. More specifically the coronavirus causing the current pandemic is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The common symptoms include a dry continuous cough, fever and shortness of breath; severe cases involve pneumonia, which may require ventilatory support [2]. As of 27 March 2020, the UK has 14 543 confirmed positive cases of COVID-19. With this number set to rise in the coming weeks towards a peak of the UK epidemic, preparations are being made across the whole country to combat this. All non-urgent elective surgical procedures have been put on hold for at least 3 months. This has the potential to free up hospital beds and theatre staff including surgeons. Hospitals are being asked to accelerate the discharge process for surgical inpatients after surgery, to ensure that those who are medically fit can return home. Subsequently, more resources such as ventilators and personal protective equipment (PPE) can be directed towards patients with coronavirus and secondly elective surgical patients will not unnecessarily be exposed to the virus. Similar redeployments of staff are occurring in other settings, such as dental surgeries, and other non-essential services, such as fertility clinics.

A number of urological conditions are benign but the impact on quality of life and one's ability to function is significant. For example, male infertility and urinary incontinence have significant mental health effects. Cancelling clinics for such conditions and procedures may ease pressures on the health service in the short term, but the long-term impact may be devastating if this is for a prolonged period. If the epidemic in the UK reaches its peak much later than predicted, this will not only create a backlog of cases, but delay patients later down the line as clinicians seek to make up for lost time and regain ground. Therefore, a fundamental question that needs to be addressed in urology and indeed all other medial and

surgical specialties is how to prioritise patients who need treatment for emergency conditions not related to coronavirus.

Broadly, urological patients can be divided into three main groups: oncological patients, patients with life-threatening conditions (such as obstructive uropathies) not related to oncology, and benign conditions [3]. Rationing of care and risk-stratifying patients is complex. Indeed, hypothetical ethical and care rationing scenarios used to examine doctors in training have become more relevant in this pandemic. As more anaesthetists, theatre staff and ventilators are drafted in to support intensive care facilities many non-oncological urgent urological procedures may have to be carried out under local anaesthesia, as normally done for high-risk patients not able to go under general anaesthetic [4,5]. This many mean increasing use of stents and percutaneous local anaesthetic procedures, e.g., to treat upper urinary tract obstructions. Urological oncological diseases and obstructive uropathies will inevitably get priority in times of reduced operating theatre availability and outpatient procedures. However, for some oncology cases alternative treatment methods, such as radiotherapy and chemotherapy, may be considered. But if a patient is treated using radiotherapy for a locally advanced prostate cancer for example, it will require numerous visits to the hospital, which increases the chances of infection. Also, chemotherapy specifically for the bladder cancer management can impair immune system function and make a patient more susceptible to infection. Management of urological malignancies is multidisciplinary and there is scope to make more of these meetings virtual and video-conference based.

A 5-point scale for surgical priority tiers has been developed by the Cleveland Clinic Urology Department ranging from 'score 0' emergency (for example testicular torsion) to 'score 4' non-essential procedures such as living-donor renal transplantations [6], more general guidance is shown in Table 1. A more patient accessible version can be created that allows patients to see when they should contact their GP

Table 1 Adapted from the Royal College of Surgeons (RCS) Intercollegiate General Surgery Guidance on COVID-19 (<https://www.rcseng.ac.uk/coronavirus/joint-guidance-for-surgeons-v2/>) and BJUI 'COVID-19 and Urology' blog.

Surgical procedure	Summary of impact of COVID-19 on selected urological procedures
Endoscopic/outpatient procedures	Diagnostic work should be avoided where possible, only emergency procedures under local anaesthetic ideally. Only urgent outpatient procedures should be carried out, these include biopsies of the prostate, cystoscopies for suspected bladder malignancy or haematuria.
Open/laparoscopic	<ul style="list-style-type: none"> • Only urgent procedures, assessment for COVID-19 should be carried out, reduce chances of the need for post-surgery critical care. Full personal protection equipment (PPE) should be worn. Urgent procedures may include trauma, ureteric stones, torsion and high-risk cancer patients • The safety of carrying out laparoscopic work remains undetermined • The merits of local vs general anaesthetic should be considered on a case by case basis if applicable
Selected points on general theatre safety	<ul style="list-style-type: none"> • The number of staff in theatre should be minimised and all must wear PPE in full with visors • Positive pressurisation should be put on hold in theatre during a procedure and only 20 min after the patient has left the theatre, should it be restarted • Need for COVID 19 testing of the patients and the clinical team prior to the procedure

about a health issue and when a urologist should be contacted by the GP, alongside important screening questions. This can help to minimise patients self-presenting at the hospital for non-urgent cases. However, there may be a controversy around how certain conditions are categorised and some colleagues in Italy have taken an even more narrow approach, limiting to only a few high priority elective procedures and emergencies owing to the severity of the situation there. Multiple layers of scrutiny can be implemented for any surgical procedures being carried out, on a regular basis by 'strategic assessment teams' [5]. Screening interviews of patients can be done virtually by junior members of the urology team; this should include screening for coronavirus symptoms in last 2 weeks, as well as travel history. More complex cases can be dealt with, initially virtually, by senior urologists. Patients with non-urgent conditions can be deferred by a few months or prescriptions sent electronically. Where there is a high degree of suspicion for malignancy or obstructive urinary disorders, patients can be called in to reduced capacity in emergency outpatient clinics.

Further restrictions to surgical practice may have to be made if there is a further drop in staff numbers. A shortage of antigen tests for the virus, as is the case in the UK currently, means that some NHS staff are unable to return to work before completing their respective self-isolation periods, testing for the virus will enable those without the infection to return to work quicker. Very pertinent questions are raised regarding surgical and medical postgraduate training. This pandemic highlights the need for more general medical training for surgical trainees to ensure that during difficult times, such as these, staff can be redeployed and call upon their transferable clinical skills from prior training. In times of need, the specialised skill set of urologists can be widened to the care of critically ill patients for the greater good of public health. Testing of all patients coming to hospital and medical staff should be

conducted in a transparent manner and PPE should be available for all.

Whilst we are working to have a plan to manage this pandemic, a serious consideration should be given to the further planning. There is a serious need for a set up with parallel healthcare systems, where we need hospitals that continue to cater for emergencies and cancer management, and on the other hand institutions that could potentially share the burden to manage pandemic cases.

Conflict of interest

None disclosed.

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