

## Utility of Telemedicine in Pediatric Urology Clinic during Covid-19 Era-Mini Review

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### Abstract

The COVID-19 pandemic has had a huge impact on all specialty clinics including pediatric urologic practices across the world. At many centers emergency surgeries were pursued without interruption, however, elective procedures had to be halted across many hospitals during the first wave of COVID-19. Delaying pediatric urologic procedures can be drastic in certain situations (such as obstructive uropathy leading to infections or sepsis) because they can lead to worsening of the disease. To avert morbidity associated with the deferment of care during the COVID-19 pandemic, practices that safely allow for high quality care have been implemented. In this article we reviewed recent telemedicine reports, related challenges faced by both physicians and pediatric urology patients and suggestions regarding the best practices to overcome these challenges.

**Keywords:** COVID-19; Pediatric Urology; Telemedicine

### Introduction

The COVID-19 pandemic has had a huge impact on all specialty clinics including pediatric urologic practices across the world. This has resulted in the cancellations of elective surgical procedures in operation theatres and non-critical or emergency patient appointments at outpatient clinics [1,2]. At many centers emergency surgeries were pursued without interruption, however, elective procedures had to be halted across many hospitals during the first wave of COVID-19; but it is a relevant query as to which non-emergency surgeries can be postponed safely without much danger to the patients' lives [2,3]. Similar questions are being asked regarding the postponement of outpatient clinic visits. Delaying pediatric urologic procedures can be drastic in certain situations (such as obstructive uropathy leading to infections or sepsis) because they can lead to worsening of the disease. In some conditions this delay may not only result in irreversible

loss of kidneys but also can become life threatening if not managed immediately. To avert morbidity associated with the deferment of care during the COVID-19 pandemic, practices that safely allow for high quality care have been implemented [1,4].

Since the beginning of the COVID-19 pandemic, social distancing has been followed globally; which has fostered the use of telemedicine technology. It has become an essential support to mitigate the pressure on physicians and patients alike to make a way out in the current challenges [5-7]. However, it is essential to note that the type of bond is a virtual relationship between doctors and patients so addressing the beliefs and expectations of patients and physicians is strongly advised for affirmation of this mode of technology especially in the developing countries [8]. Moreover, addressing issues of patients' privacy and maintaining secure communication are also important. Also, distance learning is equally important for running a successful telemedicine program [6-9].

After the first wave of the COVID-19 pandemic, accelerated adaptation of telemedicine has been witnessed in some centers of the world across many specialties including pediatric urology [10,11]. As telemedicine facilitates the delivery of care while also maintaining safe social-distancing steps. Remote video consultations have been used successfully by some centers in pediatric urology for postoperative follow up care [12,13]. However, there is a paucity of existing literature on the widespread use of telemedicine for general pediatric urologic conditions especially in the context of the current pandemic.

### Methods

We did search on PubMed, Medline database publications using: COVID-19, pediatric urology, telemedicine clinic. The publications included were special communications, reviews, conferences papers, books and research studies regarding the subject matter over last one year.

### Discussion

Telemedicine is a special mode of clinical interaction that allows for delivering health care services to patients from a remote site. Where patients don't need to be physically present in the premises of the hospital. This type of communication has assisted in averting cancellation of clinical outdoor patient consultations in the developed world in the current pandemic. It has the potential to be employed for most of the routine cases and oncological consultations. In urology, some of the local procedures such as flexible cystoscopy, urethral dilatations and supra pubic catheterization are indispensable and need physical interaction with the patients. Flexible cystoscopy is needed for initial diagnostic purposes in cases of hematuria and lower urinary tract symptoms. Urethral dilatation is used for strictures of urethra in order to allay the agony and pain associated with retention of urine and the difficulty faced by the patients in voiding. This being the reason, virtual communication with the patient cannot replace the face to face interaction even in urology, however, it still can be accommodating in many of the routine scenarios. Similarly, in the pediatric urology, physicians can rely on virtual clinic for making treatment decisions in less critical scenarios (such as prescribing pain killers or antibiotics according to laboratory reports) [13-16].

Preceding the COVID-19 pandemic, telemedicine was a less frequently utilized form of delivering health care in the pediatric urology clinic [10]. In past, studies have mentioned the successful use of telemedicine for post-operative follow up care as well as for prenatal consultations on urologic conditions [4,10,16,17]. After facing the pandemic challenges, practitioners have changed the way of traditionally provided health services in order to maintain social distance and quality care at the same time. This change has been adopted in dealing the pediatric urologic patients as well. In a study, it was mentioned that despite the minimal preparation time during the first wave of the pandemic, their virtual clinic outcomes were encouraging. In scheduled virtual appointments excluding no-shows, their technical success rate reached 92% [18]. Another study conducted by Finkelstein, *et al.* mentioned a similar rate of 96% [12]. There are many possible reasons for variations in results mentioned in studies pertaining to the telemedicine success rates. This may be due to nature of the visits, discrepancy including demographics and possible differences in scheduling and patient reminders. Studies have mentioned that 6% to

18% of their cohorts included only post-operative visits. An interesting finding in a study pertaining to an otolaryngology cohort showed that postoperative virtual clinic visits have been found to be better attended as compared to other follow-up appointments [17,18]. It can be explained by the reason that patients might have invested more in an appointment after a surgery. It is pertinent here that pre-appointment reminders are a proven method to reduce no-show rates for in-person visits and same can be applied to virtual clinic appointments [17-19].

There are inherent challenges as well with use of telemedicine such as lack of important physical findings in such a virtual appointment and it is a matter of concern for many of urologists in the current pandemic. For example, important physical signs such as skin color changes in a potentially critical condition can be easily missed in telemedicine practice. Moreover, the dependence on the previous notes and electronic form of records have to be relied upon to make treatment decisions for the patients in virtual clinic [15-20]. Doctors who have no preceding experience with this modality may face challenge such as time management, learning new technological features used in telemedicine, deficiency of essential computer literacy. Initially, telemedicine interaction with a patient may not be completed swiftly so time management is an important aspect to deal with in the first place in a virtual clinic. Apart from these, team work and timely coordination with staff of information technology and telecommunication and an extra responsibility to sustain coherent team work of all stakeholders in the virtual clinic. Moreover, challenges for a doctor include keeping an organized record for the next review. Additionally, post-visit follow up of the laboratory investigation results is a tedious task and the modification needed in the treatment plan of a particular patient is an additional challenge [15-20].

Other facets of the challenges are data storage, easy availability, smooth access and keeping intact the privacy of patients. The lack of adequate physical interaction may need to be compensated with powerful and effective verbal communication by the treating doctor for proper satisfaction and education of the patients regarding their ailments. Telemedicine utilization might not be a daunting task in developed world, however, in developing countries, arrangements are still needed for proper training of the physicians, continuity of the smooth functioning of the hardware, software and the involved personnel. Judicious policy making regarding investment in hardware and human resource is the need of the hour in developed as well as developing countries [14,19,22,23].

Having discussed the challenges of telemedicine, there are numerous advantages of telemedicine for patients and attendants such as a reduction in waiting time in outdoor clinic [20,21], marked reduction in travel time, decreased rate of missing school and job work inherent with the in person clinical visit [12,18,20]. However, care has to be taken to balance this time and travel related savings and good patient care at a remote distance. According to a recent study, telemedicine use in pediatric urology clinic was successfully adapted regarding the alteration in prescription, planning a surgery or requesting imaging studies [18-20]. However, they had to defer surgical planning in their cohort for undescended testes due to lack of physical examination needed for it. They also underscored the fact that detection of a urethrocutaneous fistula or meatal stenosis after hypospadias surgery may pose challenging task. They reiterated the fact that telemedicine utility may vary from one condition to another condition [18]. It is also important to note that it would be beneficial to investigate patients' perception and satisfaction with the utility of telemedicine. As far as scheduling the follow-up visits are concerned, the team taking care of the telemedicine clinic should ensure that the laboratory results of the complementary tests are readily available to the doctor. A visit should be scheduled after the results are at hand and clinical decisions can be made in light of the results. Another point is prioritizing a follow up visit in the current pandemic, for example, it is judicious to delay safely the follow-up visits in low-risk patients [22-24].

### Conclusion

Telemedicine has been adopted in various specialties clinics with encouraging results and has paved a way to explore prospects of virtual clinic regarding safety of both the health care personnel and the patients. Pediatric urology has been more successful in conditions

where there is less reliance on physical examination. Telemedicine can be safely used in future in pediatric urology clinic, however, there still is room for improvement.

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### Conflicts of Interest

None.

### Informed Consent

Taken from patient regarding whole procedure.

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