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# The impact of COVID-19 on urology office visits and adoption of telemedicine services

*Mohit Butaney and Amarnath Rambhatla*

## **Purpose of review**

The purpose of this review article is to discuss the impact of Coronavirus Disease 2019 (COVID-19) on the evolution of telemedicine use for urology office visits.

## **Recent findings**

The COVID-19 pandemic has caused a dramatic change in the delivery of healthcare. Fraught with numerous barriers previously, the need for healthcare delivery during a time of social distancing and increased healthcare requirements drove the adoption of telemedicine forward. This 'trial period' over the last year has allowed us to appreciate the potential utility of telehealth-associated services in practice and consider its role even after the pandemic. Multiple studies equating its utility to in-person visits whereas simultaneously providing added convenience and cost-related savings have been published in the urologic literature. Permanent regulatory changes will need to be implemented to allow us the flexibility to use telehealth in the future.

## **Summary**

It is clear that telemedicine is an effective strategy for delivery of healthcare under the right circumstances. Although it initially started to fill a need out of necessity, it can help us effectively deliver healthcare as long as the regulations surrounding telemedicine allow us to continue to use it. This period has been challenging for healthcare delivery and led to policy changes that served as a catalyst to help us better understand this previously underutilized resource.

## **Keywords**

COVID, pandemic, telehealth, telemedicine, video visits

## **INTRODUCTION**

The COVID-19 pandemic has caused a dramatic shift in our system of healthcare delivery, initially due to the necessary diversion of resources to manage COVID-19 patients, but also due to the continued appropriate need for social distancing. Telemedicine or telehealth is the use of computers, phones, wearable sensors, and other communication devices to exchange healthcare information and advice between a patient and a provider typically via video visits, phone calls, emails, secure messaging, or texts. Although telemedicine was previously seen as a method to increase access to rural areas, it has rapidly evolved and become an essential part of healthcare delivery due to the relaxation of regulation at the federal and state level which incentivized providers and health systems to implement telehealth services. Without these legislative changes, telemedicine would not be sustainable going forward and the majority of urologic care would occur in metropolitan areas with

traditional in person visits. In this review, we discuss the adoption of telemedicine with a special emphasis on outpatient urological care.

## **POLICY SHIFT**

The adoption of telemedicine has been slow due to a variety of reasons but one of the primary reasons has been with regards to healthcare policy and regulations. In the United States, Medicare coverage of telehealth services began in 2001 with the enactment of the Balanced Budget Act of 1997 (BBA); however, there were previously several restrictions

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## KEY POINTS

- The COVID-19 related public health emergency has caused a dramatic shift in our system of healthcare delivery.
- Several key policy changes regarding the use of telemedicine during the pandemic have served as a catalyst to utilize it in a widespread fashion.
- We now have a better understanding of the benefits of telemedicine for all stakeholders involved including patients, providers, and payers.
- Our insight into this experience is going to be crucial to understand how we might be able to incorporate telemedicine into our healthcare delivery system postpandemic and we must advocate for permanent policy changes to allow us to continue to use telehealth in the future.

on telemedicine services that limited its widespread use. The Department of Health and Human Services, in response to the pandemic in March 2020, waived several of these restrictions paving the way for the necessary use of telemedicine during this time (1135 Waiver) [1<sup>1</sup>,2<sup>2</sup>]. Most importantly, the originating site requirement, which previously required patients to be located in a medical facility within a rural area, was waived to allow patients to 'visit' providers from any originating location including their homes. Several other rules were relaxed allowing for the rapid utilization of telemedicine such as the reimbursement to providers comparable to in-office visits, increased ability of healthcare providers to practice across state lines, ability of advanced practice providers to utilize telehealth services in delivering care, and the relaxation of privacy policies surrounding telehealth technologies. Apart from federal regulations, it is important for providers to consider state laws when it comes to their specific practice and these have followed suite to allow for the practice of telemedicine. This trend is also seen with private medical insurance companies which have allowed providers to offer and bill for telehealth services to new patients whereas previously these visits could only be used for established care. The impact of COVID-19 internationally has similarly led to dramatic policy changes allowing countries with a telehealth framework in place to make a leap in utilization and other countries to rapidly build their infrastructure associated with telemedicine [3].

Buoyed by the benefits of convenience and savings, telemedicine will continue to see a high demand postpandemic. The key question going forward is how governments will handle these policies

and regulations and if they will make lasting changes to facilitate telehealth. Future legislation to incentivize telemedicine has the potential to benefit patients as well as healthcare globally. However, there continue to be concerns about fraud, overuse of care, and patient privacy associated with telemedicine which were some of the barriers associated with initial telemedicine regulations.[4] Active discussion regarding policy postpandemic is underway; more recently the Creating Opportunities Now for Necessary and Effective Care Technologies for Health Act 2021 along with 42 other bills was introduced in the 117<sup>th</sup> United States congress highlighting the political interest in making some of the telemedicine flexibility permanent [5]. However, every country has its own limitations in the current state of telemedicine so there will be expected variability in how we build on this experience and move toward an improved and efficient system of healthcare delivery.

## ADOPTION OF TELEMEDICINE AND EARLY TRENDS

The pandemic served as a catalyst for rapid and necessary policy change which has helped us better understand the utility of telemedicine. Data collected by the Centers for Disease Control and Prevention and the Health Resources and Services Administration have been helpful to understand the trends in telemedicine during this period. Health centers utilization of telemedicine rose from 43% to 95% from 2019 to 2020 during the COVID-19 pandemic [6<sup>1</sup>]. The largest increase was seen in April 2020, but telehealth continues to be used at a higher rate than prepandemic levels. Preliminary Medicare data between March and October 2020 showed that over 24.5 million out of 63 million beneficiaries received a telemedicine visit during the pandemic.[2<sup>2</sup>] Similar trends were noted in Medicaid or Children's Health Insurance Program data that showed an increase of 144,067,318 or 3,774% in services delivered through telehealth when compared to prepandemic rates [7]. Nearly a third of all visits during the early phase of the pandemic were telemedicine visits [8]. Prior to the pandemic, surgical specialties had been less likely to use telehealth than other specialties but these specialties were quick to adopt telemedicine during the pandemic [9].

## TELEMEDICINE IN THE UROLOGY OFFICE

An increasing trend of utilization of telemedicine in urology was noted even prior to the pandemic; however, the slow adoption has been attributed to

concerns regarding reimbursement, lack of resources/time, and liability issues cited as some of the more significant barriers to implementation according to a survey done by the American Urological Association's (AUA) Telemedicine Workgroup [10,11<sup>11</sup>]. Despite these barriers, a recent study using a state insurance claims database showed urology as leading the pack amongst surgical subspecialties with telehealth conversions of encounters during the pandemic [9]. Telemedicine has been shown to be effective in a wide variety of sub-specialties including urologic oncology, pediatric urology, endourology, and andrology even prior to the recent public health emergency [12<sup>12</sup>,13–16]. However, there has been a significant difference in its utilization starting in 2020.

In a survey conducted by the AUA Telemedicine Workgroup prior to the pandemic, over 75% of urologists saw a role for telemedicine with follow-up visits, 70% with postop visits, 52% with triage prior to a new visit, and 36% with new patient visits [11<sup>11</sup>]. This study also reported that only 14% of responding urologists were using telemedicine despite 47% being associated with institutions promoting telemedicine. As per the 2020 AUA annual census data, 71.5% of urologists confirmed participation in telemedicine, a significant increase from the 11.9% in the previous year [17<sup>17</sup>]. The top two services used for which urologist received compensation were video visits or conferencing with patients (93.9%) and telephone calls with patients (77.3%). Consultation topics for which practicing urologists utilized telemedicine were voiding dysfunction, benign prostatic hyperplasia, recurrent urinary tract infections, stone disease, oncology/PSA, erectile dysfunction, hematuria, and infertility [17<sup>17</sup>]. Interestingly, referring patients to telemedicine also served as a process to reduce appointment wait times longer than 4 weeks [17<sup>17</sup>]. Video visits have clearly been found to be a safe and effective substitute for in-person care across a broad range of urologic diagnoses but ultimately it is up to the discretion of the urologist to decide whether a specific patient can be evaluated by telehealth or needs to be evaluated in person [18]. There still appears to be significant variability in this without standardized guidelines across institutions.

The most important factor in this experience has been that the primary stakeholder, the patient, has been shown to be satisfied in a number of different urological telemedical settings [12<sup>12</sup>,19<sup>19</sup>]. Telemedicine has been employed in situations that require time-sensitive patient care and coordination such as urologic oncology with studies showing high levels of physician and patient satisfaction [20<sup>20</sup>]. Shared medical appointments in a group setting allow

providers to counsel a group of patients in a single setting [21]. Virtual visits also allow multiple family members to join from different locations to get an improved appreciation of the care plan for their relative which would allow for better coordinated care. Additionally, while providers have had to adapt to a new workflow, preliminary data has shown a high level of satisfaction despite a reluctance to move away from in-person visits [22<sup>22</sup>]. In addition, telehealth can help reduce transportation and parking costs as well as lead to less time off needed from work or school.

Reducing the burden of in-person care and services in hospitals has been shown to help healthcare efficiency [23]. Although initial workflow changes need to be made in practices, provider efficiency should theoretically increase during clinic with continued utilization and adapting to the increasingly self-reliant setup. Costs associated with telemedicine visits compared to traditional in-person visits have shown varied results but there are certainly significant benefits of convenience of time and transport that need to be taken into consideration for both the patient and provider. It will be important to continue to assess cost-effectiveness post-pandemic for specific clinical scenarios [24,25<sup>25</sup>].

## **ADVANCES IN TELEMEDICINE**

The major limitation of telemedicine is the lack of being able to conduct a physical exam or diagnostic procedure that is often needed to make treatment decisions. Initial telemedicine visits conducted from rural medical facilities allowed for feedback from available ancillary staff or other healthcare practitioners. This is not a possibility when a patient is conducting a telemedicine visit from home. This has allowed for the exploration of creative solutions where an examination or procedure might be necessary to make the diagnosis. Lobo *et al.* showed that trained advanced practice providers with real-time urologist feedback for procedures such as cystoscopy has allowed for improved access to care without compromising on quality and further highlighting the untapped utility of telemedicine [26]. The development of mobile apps (mHealth), home-based diagnostics such as at-home semen analyses, wearable at home sensors with real time transmission of data to physicians has ramped up and will likely continue to be important noninvasive means of supplementing the core telehealth services we are now already familiar with [27–29]. Data from McKinsey *et al.* has shown that investment in virtual care and digital health is nearly three times the level of venture capital digital health investment in 2017 promising a strong push to revolutionize this realm

of healthcare [30]. Handheld exam kits that let adults perform a guided ear exam on children to aid physicians in diagnosing an infection, personalized apps to guide physical therapy and recovery postorthopedic surgery, or at home ultrasounds for pregnant women are all a reality now – progress in other fields will further propel innovation in urology as well. However, many urologic conditions exist where the initial evaluation is driven by subjective symptoms, laboratory, and/or imaging results and a physical exam finding may not play a large role in the final treatment decision.

Apart from efficiency in the outpatient setting, groups have shown the successful utilization of clear and easy to use algorithms to efficiently triage inpatient consults to telemedicine only or outpatient clinic visits when appropriate to improve in-patient efficiency as well [31]. Other concepts such as telesurgery, telerounding, and telerounding that have been introduced over the past few decades have all been undergoing reconsideration providing an opportunity for us to rethink the way we currently deliver care [32,33].

## OVERCOMING BARRIERS

Apart from policy barriers, telemedicine has several other hurdles to overcome to fully integrate into practice postpandemic. Devices and platforms that are compliant with privacy regulations across different systems while simultaneously being easily adoptable by physicians and patients forms the basis of effective telehealthcare. Up-front investments and subscription fees may be a higher financial burden to surmount for smaller practices [34]. The emergency policy changes initially allowed for non-Health Insurance Portability and Accountability Act (HIPAA) compliant platforms, such as FaceTime or Zoom, to be used if needed. Technology manufacturers have rapidly evolved to ensure HIPAA compliance and improve their platforms based on growing requirements which will be beneficial to the use of telemedicine.

The telemedicine clinic has a very different workflow and structure when compared to in-person visits. Getting all the information ahead of time, including coordinating radiological and laboratory studies close to their home is often a challenge in some situations and requires significant administrative coordination. This has led to creation of a telemedicine task force in most health systems and health organizations with the intent of identifying potential pitfalls and coming up with solutions unique to telehealth concerns. One such theoretical improvement in flow between in-office visits compared to telemedicine is the reduction in

'no show' rates. Interestingly, studies have continued to demonstrate a modest 'no-show' rate with telemedicine [13].

Although telemedicine has tremendous potential to really make a dent in the 'access to care' issue that has plagued the American healthcare system, there will need to be a coordinated effort from the government, payers, and healthcare systems, to make a conscious effort to improve health literacy and awareness as well as long term policy changes. Approximately 90% of practicing urologists had a primary practice location in a metropolitan area which furthers the rural-urban divide [17,35]. In order for patients living in a rural area to have access to specialist care, regulations regarding originating site requirement, new patient telemedicine services, and reimbursement need to be made permanent. Language barriers are also an important issue, however, these can potentially be circumvented and even improved by the direct dialing in of a third-party translator during a telemedicine visit. Tools essential for telemedicine such as laptops and smart phones are more readily available to patients and while new telemedicine users might experience a technical difficulty during their first appointment, this barrier should improve as patients become more familiar with the platform. Circumstances where video visits are not possible due to lack of access to devices or to broadband internet can resort to telephone visits to help improve patient care. Government support in decreasing the 'digital divide' to improve access to wi-fi spots and hardware loan programs might also contribute to improving healthcare for an already vulnerable population [36].

## THE FUTURE OF UROLOGY PRACTICE

Only 11.9% of urologists stated that they used telemedicine prior to the pandemic but 71.5% reported that they used telemedicine after the start of the pandemic. Telehealth is the use of emails, texts, secure messaging, phone calls, or video visits to communicate with patients. It is likely that most practicing urologists have used some form of this communication even prior to the start of the pandemic. What has changed is that there is a more widespread adoption of face-to-face video visits and changes in policy that have brought telemedicine into the limelight. Many urologic encounters can be completed by obtaining a complete history, reviewing radiographic images and laboratory tests, and appropriately counseling patients regarding treatment decisions without an in-office visit. These situations are primed for telehealth. The traditional in-office encounter still remains important especially when a physical exam or diagnostic testing



such as cystoscopy or biopsy is needed. However, telemedicine clearly has an important role going forward and will add to healthcare efficiency, convenience, and economics. At the Vattikuti Urology Institute we went from performing less than 100 telemedicine visits in 2019 to performing over 5000 in 2020 and remain on track for similar numbers in 2021. However, without continued legislative action, there is a potential that we would return to a system that only covers telehealth in a limited setting. Physicians will need to be at the forefront to advocate for permanent legislative change in these policies which will allow us the flexibility to use telehealth services to improve healthcare delivery in the future.

## CONCLUSION

The pandemic has been challenging for healthcare but has served as a catalyst to help us better understand and utilize telemedicine. It is clear that telemedicine is an effective strategy for delivery of urologic healthcare and will permanently affect the way we practice medicine as long as regulations surrounding the use of telemedicine become long lasting.

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## Conflicts of interest

There are no conflicts of interest.

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- of special interest
- of outstanding interest

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