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The Emerging Critical Role of Telemedicine in the Urology Clinic: A Practical Guide



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ABSTRACT

Introduction: Although telemedicine (TM) has been available for several decades, the recent increase in its acceptance due to the COVID-19 pandemic has emerged as a valuable solution for the delivery of health care that provides easy, affordable, and convenient communication with urologic patients.

Objectives: The objective of this study was to highlight limiting factors and provide successful practical solutions to assist urologists in incorporating and maintaining TM in their practices.

Methods: A thorough literature review was conducted utilizing PubMed, Cochrane library, clinicaltrials.gov, Google Scholar, and Web of Science. Search terms and keywords included “telemedicine” and “urology.” Only articles written or translated into the English language were included.

Results: A total of 12 peer-reviewed articles were identified that discussed barriers for incorporation of TM in urology. Articles exclusive to the use of TM during the COVID-19 pandemic were also included, as well as American Urological Association and European Urological Association guidelines and Centers for Medicare & Medicaid Services statements and policies regarding TM pertinent to urological practice.

Conclusion: TM is currently a viable option and fills an unmet need for most practicing urologists, especially during the COVID-19 pandemic, offering insight to the relative ease of transition to online clinical practice. **OA Raheem, S Brimley, C Natale, et al. The Emerging Critical Role of Telemedicine in the Urology Clinic: A Practical Guide. Sex Med Rev 2021;9:289–295.**

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INTRODUCTION

The field of urology has historically used cutting-edge technology. Prime examples are the rapid incorporation of shockwave lithotripsy, laparoscopy and, more recently, robotics. Since 2016, telemedicine (TM) has evolved and become an integral part of clinical practice for many urologists. TM is defined as “the use of telecommunication and information technology to provide health care services that are not “face to face” with patients who do not require a physical examination and includes real-time (synchronous) provider-to-patient and provider-to-provider communication, as well as information that is stored for review at a later time (asynchronous or stored and forwarded).¹” On March 15, 2020, the Centers for Medicare & Medicaid Services (CMS) expanded access to TM services for all Medicare/

Medicaid beneficiaries, not just those who had been diagnosed with COVID-19. Moreover, the use of TM within hospitals, private urologists’ offices, home health agencies, and nursing facilities has seen a significant increase since the beginning of the COVID-19 pandemic.^{1–3} In some states, an over 60% increase in the use of TM has been observed between March 2nd and April 14th, 2020.⁴

The TM industry is projected to be a \$48.8 billion market by the year 2023.⁵ In the United States, there were 100,000 TM consults performed each month in 2015.⁶ Recently, TM adoption by urologists and urologic practices has drastically increased, stimulated by the COVID-19 pandemic. In addition, TM is opening the possibility of having personalized and convenient health care exclusively available at the click of a mouse. In this era of COVID-19, TM adoption by urologists and urologic practices has drastically increased, and the field of sexual medicine is particularly primed for the utilization of TM given the type and extent of sexual dysfunction and its related diseases or processes. As TM continues to expand its role in urology, TM utilization in sexual and men’s health continues to be attractive to both patients and urologists. Sexual medicine patients can easily be

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managed by TM, often with the result of cheaper health care for the patient.⁷

This surge in the adoption of TM is coupled with Medicare reimbursement rules that provide parity between in-person and virtual visits and the relaxation of HIPAA restrictions to accommodate these unmet needs and changes in health care access and delivery resulting from the COVID-19 pandemic. This review aims to highlight limiting factors for incorporation of TM into practice and to provide practical solutions to assist urologists in implementing TM into their practice and maintaining TM to provide care to patients with sexual dysfunctions. In addition, 5 examples of how TM can be used in the management of sexual medicine patients is provided.

MATERIALS AND METHODS

A literature search from inception through June 2020 utilized PubMed, Cochrane library, clinicaltrials.gov, Google Scholar, and Web of Science. Search terms and keywords included “telemedicine” and “urology.” The search criteria for each of these resources included inclusion of key words. Only articles written or translated into English language were included.

RESULTS

A total of 12 articles that addressed the barriers to incorporation of TM in urology were identified. Articles which provided discussion of barriers exclusive to conditions of the COVID-19

pandemic were also included in this review. We also identified American Urological Association (AUA)¹ and European Association of Urology guidelines,⁸ as well as CMS statements and policies regarding TM pertinent to urological practice (Table 1).

Evidence Synthesis for This Review

Perspective Background

Currently, TM plays a pivotal role in alleviating the strain of the COVID-19 pandemic on the United States health care system. TM makes it possible for patients to receive health care without the need to physically be present in a clinic setting, limiting provider-to-patient and patient-to-provider exposure to COVID-19. Medicare has responded by encouraging virtual visits that qualify as a billable patient encounter. Moreover, the AUA has encouraged practicing urologists to maintain social distancing measures by implementing TM in their practices.⁹ In a recent AUA webinar on TM, implementation of TM services was recommended not only for the current crisis, but for the future, as use of TM is “not going away” but will remain a part of health care moving forward.⁹

Although the health care industry has historically been reliant on face-to-face consultations in which physicians could examine the patient, sexual medicine is a field that is particularly primed for online options for men who feel uncomfortable bringing up their sexual problems in person. The European Society of Sexual Medicine stated that web-based medicine is especially useful because of patient’s privacy and stigma-related concerns.¹⁰ Many

Table 1. Selected guidelines, statements, and policies regarding telemedicine pertinent to urological practice

| Year | Authority | Statement/policy | Selected policy addressing telemedicine |
|------|---|---|---|
| 2018 | American Urological Association (AUA) ¹ | Telemedicine | AUA supports patient access to quality urologic services through the use of telemedicine when appropriate provider criteria are met. AUA supports coverage and payment for quality urologic services when services rendered are medically necessary and meet appropriate documentation and performance standards. |
| 2020 | European Association of Urology (EAU) ⁸ | EAU Guidelines Office Rapid Reaction Group: An organization-wide collaborative effort to adapt the EAU guidelines recommendations to the COVID-19 era | 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 telemedicine may be an important way to continue to support patients and their careers during this crisis. |
| 2018 | Centers for Medicare & Medicaid Services (CMS) ⁵ | Telehealth services | Medicare part B pays for covered telehealth services included on the telehealth list when furnished by an interactive telecommunications system if [certain] conditions are met |
| 2020 | Centers for Medicare & Medicaid Services (CMS) ⁵ | Secretary Azar Announces Historic Expansion of Telehealth Access to Combat COVID-19 | CMS expanded Medicare coverage for telehealth visits, the HHS Office for Civil Rights (OCR) announced it will waive potential HIPAA penalties for good faith use of telehealth during the emergency, and the HHS Office of Inspector General (OIG) provided flexibility for health care providers to reduce or waive beneficiary cost-sharing for telehealth visits paid by federal health care programs. |

men feel embarrassed about their sexual dysfunction, and thus do not seek medical help in a traditional format. Furthermore, men avoid the urologist's office due to invasive and unpleasant physical examinations. Untreated sexual dysfunction leads to poor mental health and lower quality of life.¹¹ TM offers the patient a way to talk about extremely personal and upsetting topics in an environment that is comfortable and familiar. Men's health issues remain pervasive, yet undertreated. A recent epidemiologic survey comparing ED in 8 different countries revealed ED prevalence ranging from 37.2% to 48.6%.¹² New companies such as HIMS (men's wellness) and Roman Health (digital clinic) have utilized digital formats to treat men with erectile dysfunction (ED).¹³ Both companies offer prescriptions for common ED medications without the need to physically see a health care practitioner.¹³ Of note, some of these private companies do not require a TM visit with a physician but offer treatment by filling out online questionnaires. Other telehealth companies in the men's health space, such as Vault Health, merge at-home and telehealth visits to facilitate blood draws and physical examinations. By providing care to patients within the privacy of a patient's home, TM companies can deliver discrete health care services to patients seeking consultations for a range of urologic conditions, providing them with a simple and convenient alternative to physically visiting with a health care practitioner for their non-acute health care needs. After a TM visit with a provider, the patient can be prescribed medication, all within the comfort of a patient's home. Patients also have a choice to subscribe to a reoccurring prescription that is mailed to their house at set intervals. In this platform, physicians also can recommend blood tests such as PSA and serum testosterone levels or schedule a procedure that is appropriate for their underlying medical condition. These platforms are not without their limitations, as most do not currently accept insurance. Ro Health also requires the patient to have been seen in-person by their primary care physician within 3 years of the online consultation. Another limitation of an online visit is the potential to miss serious urological problems that are not easily seen through the computer and may place a patient at risk of future sequelae. For example, testicular torsion is a time-sensitive concern that is unable to be treated through this platform, as well as testicular masses that the physician will not be able to palpate. Sexually transmitted diseases are another aspect of the physical examination that could potentially be largely missed by the physician.

In addition, TM has demonstrated an advantage in the postoperative setting. As one example, patients in rural communities in Arkansas are able to save time by traveling to a local satellite clinic for their preoperative visit, rather than the 208 miles to meet face to face with the urologist in his/her urban office. Indeed, patients also benefit from this cost-effective nature of TM technology.¹⁴

Now there are "rounding robots," which are remotely controlled telecommunication devices that are able to move between hospital rooms to allow health care practitioners to virtually visit with hospitalized patients.¹⁵ Patients in the

emergency room or inpatient setting can be seen using iPads or smartphones. During the COVID-19 pandemic, HIPAA rules have been waived such that patients can be seen using apps like FaceTime, WhatsApp, or Skype in addition to secure video-conferencing portals.⁹ It is noteworthy that some of the aforementioned TM platforms may lack HIPAA compliance or encryption, which can be a limiting factor in the full implementation of these technologies.

Potential Limiting Factors and Barriers to Telemedicine

We have outlined common obstacles and possible solutions, as well as tips to foster a productive doctor-patient interaction. Newer TM technology are amenable to visits for common urologic conditions, including sexual dysfunction, ED, premature ejaculation (PE), hypogonadism, Peyronie's disease (PD), urinary incontinence, benign prostatic hyperplasia, nephrolithiasis, hypogonadism, and postoperative checks (Table 2).

1. Patient factors and barriers

The acceptance of TM among the general population seems inevitable, but many patients, especially older ones may have difficulty embracing the new technology. These obstacles include lack of internet access or devices and/or inexperience with the internet. Others may feel uncomfortable sharing private medical information through a computer or web camera. In a randomized trial of 55 men with a history of prostate cancer managed with radical prostatectomy, half of the patients were assigned to a virtual follow-up using a TM platform, with the other half receiving follow-up in the traditional face-to-face office setting.¹⁶ This study revealed that there was no difference between the groups in the rates of patient perception of confidentiality,

Table 2. Urologic evaluation and management services that may be performed using telemedicine

| |
|--|
| Erectile dysfunction |
| Peyronie's disease |
| Premature ejaculation |
| Hypogonadism (low testosterone to estradiol ration) |
| Overactive bladder |
| Urine incontinence (eg, stress, urge or mixed or functional incontinence) |
| Urinary tract infection |
| Postoperative follow-up |
| Vasectomy and vasectomy reversal consultation and follow up |
| Prostate cancer screening and PSA follow-up |
| Discussion of radiology reports, urologic evaluation and pathology (uroflow, post void residuals and biopsies) |
| Infertility consultation |
| Rural patients at a great distance from urologist clinic |
| Female sexual medicine (dyspareunia) |
| Consultation with patients and other medical colleagues |
| Benign prostate hyperplasia |
| Nephrolithiasis |

efficiency, quality, or overall satisfaction. Those in the virtual visit group avoided lengthy travel time, additional costs such as parking and time away from work. Multiple other studies have found that “e-consults” and other TM services were safe alternatives to in-person visits.^{17–19} For this level of communication between patient and urologist to be successful, it is imperative that clinic staff be trained to address patient questions about the use of the new technology.

2. Provider barriers

Most providers have a short learning curve adapting to TM technology. Privacy is also a concern, as it is imperative that the patient feel that the TM visit will use similar codes of conduct as an in-person encounter. There may be patients who opt for a TM visit who would be better treated in the office, which underpins the importance of proper triage of these patients. For example, when patients receive intracavernosal injection training, some patients would benefit more from an in-person training than a TM visit. Each urologist should assess their patient’s understanding and determine which would best fit the situation. Other injections such as Xiaflex (Collagenase Clostridium Histolyticum, Malvern, PA) require a trained urologist and these patients should not be offered a TM option. Providers do not have the means to conduct a physical exam when conducting patient interactions through TM means. Therefore, the physical examination is limited to auditory and visual information. Patients who do not qualify for a TM visit include those with a language barrier, cognitive disorders such as Alzheimer’s disease, or any patient where a physical examination is required. Thus, it may be necessary to limit telemedical encounters to settings where the physical examination is not a critical component of the visit. However, even then there are instances where the TM setting is inferior to the in-person clinic setting. For example, assessing penile curvature through photographs sent in by patients may be low quality, which makes it difficult to interpret and determine the degree and extent of PD. For Xiaflex approval, insurance companies often require an in-person physical examination conducted by a board-certified urologist before authorization of Xiaflex treatments is achieved, specifically documenting penile curvature degrees, location, number, and anatomy of penile plaques. These problems can be ameliorated by the initial in-person examination, whereas later visits can be converted to online interactions.

In the new era of TM, there are also new rules of etiquette the urologist should follow to ensure a successful TM visit interaction. The providers should find a room where he/she can be alone, and assure that the Internet connection is secure, with enough bandwidth to video chat. It is reasonable to invest in a microphone and higher-end video equipment. Review the patient’s electronic medical record *before* the interaction occurs. The background of the video should not have distracting content; a bland background works best. It is imperative that the physician does not appear bored and should avoid yawning or looking at his/her watch. Eating and drinking would not be

appropriate in the office and have no place in the virtual visit either. It is important to dress as a urologist; a coat and tie, a dress shirt, a white coat, or scrubs are expected. Urologists should emphasize the importance of highly functional audiovisual equipment to patients to maximize available diagnostic information and reviewing imaging.

In addition, it is imperative that urologists conducting TM visits familiarize themselves with their state policies surrounding video visits, including licensure requirements, need for consent, what documentation is required, and prescription regulations. With the 1135 Waiver, CMS are now permitting interstate TM for providers with an active non-restricted medical license in another state.^{20,21} However, it is critical that urologists familiarize themselves with their malpractice insurance and appropriate coverage for TM visits.

3. Office and staff factors and barriers

Practices must triage and predetermine which diagnoses and indications will be treated via TM visits. Furthermore, clinics must determine what medical records, laboratory tests, and imaging studies are required before initiation of a TM visit. These protocols vary by institution or clinic.^{22,23} TM will undoubtedly change the workflow of a urology clinic. Billing is also a major concern. Medicare allows for TM visits only when patients are in designated sites, although those rules have been altered for the COVID-19 pandemic. There are many technology options that can be used. [Table 3](#) provides a list of the most popular video providers and the advantages and disadvantages of each. Currently, 35 states provide parity for private insurance companies for reimbursement similar to in-person visits, although many regulations often restrict full parity. Many states only reimburse for rural patient visits or require that the patient be present at a qualifying site, often excluding the patient’s household.²⁴

4. Coding and billing factors and barriers

TM visits are billed similarly to in-person visits. A 15-minute in-person established patient visit and a 15-minute TM established patient visit are both billed with Common Procedural Terminology code 99213. The documentation of a TM visit has important differences with in-person visit documentation. First, the treating provider should document patient consent to conduct a live face-to-face video conference visit. That documentation should also include the location of the treating provider as well as the patient location. The provider location is referred to as the distant site; the patient location is referred to as the originating site. Second, claims derived from the video visit should include a Place of Service 02 or modifier code (ie, GT or 95). These codes denote that a TM encounter occurred and are typically required by private payers. Medicare does not require a modifier, but the Place of Service 02 must be denoted. Finally, TM encounters preclude a detailed physical examination. Higher level of service codes is difficult to achieve without a detailed physical examination. Therefore, most providers use time-based

Table 3. Telemedicine videoconferencing product reviews

| Company | Pros | Cons |
|----------------------------------|---|--|
| Cisco Jabber | Supported on all mobile devices (eg, iPad, iPhone, BlackBerry, Android) | Complicated server requirements and difficult to cross firewalls |
| Google + Hangouts SecureVideo | Free • HIPAA compliant • Good technical support | No screen sharing No H.323/SIP support |
| Skype business | Market leader for voice and video | • No screen sharing • Requires ample bandwidth |
| Tango | Excellent on iPhone, Android | No screen sharing |
| WebEx | Leader for presentations and webinars | Decreased video performance |
| Zoom healthcare | Mobile support for iPad, iPhone, and Android | Group video not free after 40 minutes |
| Doxy.me | HIPPA compliant Support all mobile devices Free | |
| Apple FaceTime | Accessible Free | Not HIPPA compliant |
| Facebook Messenger video chat | Accessible Free | Not HIPPA complaint |
| VSee | HIPPA Compliant Accessible | Charges apply |

billing for TM encounters. [Table 4](#) lists all Common Procedural Terminology codes related to TM visits.

Reimbursement for TM encounters varies by payer. Historical restrictions that payers placed on patient location being at a remote site from the doctors' offices have largely been relaxed in the face of the COVID-19 pandemic. Patients are no longer required to be located in a Healthcare Professional Shortage Area or conduct the video visit from an approved medical office. Now it is acceptable to have a virtual visit between the patient's home and anywhere that the doctor wants to conduct the visit.

Clinical Examples of Telemedicine Encounters

Erectile Dysfunction

Multiple online options for treatment of ED exist today. ED is easily amenable to online interaction due to the nature of the disease and lack of physical examination characteristics. A 2020 German study reviewed data from advertised treatment of ED via internet searches. Standardized questionnaires were utilized for the initial diagnosis of ED, as well as a way to screen patients with contraindications. A physician would then review the patient's answers and review their chart before e-prescribing a phosphodiesterase-5 inhibitor to be mailed to the patient.²⁵ Patients can choose which pharmacy they wish the physician to e-prescribe the medication in accordance with both price and location.

Postoperative Penile Implant

Currently the use of TM for patient postoperative monitoring is a small percentage but is a potentially large patient population that would benefit from the reduced burden of face-to-face

interaction. There have been successful practices of TM monitoring of radical prostatectomy patients, that included high patient satisfaction rates without compromising patient safety.²⁶ Although little data are available for the role of TM after implant, online monitoring could be a viable option for many patients and physicians. This is especially true for patients living in rural areas where travel time and cost may be a larger burden.

Hypogonadism

Testosterone therapy has rapidly gained popularity in the United States, with sales reaching \$1.8 billion in 2011.²⁷ Many for-profit clinics have opened and sold testosterone—sometimes without indication—to men seeking the benefits of testosterone. A simple online consultation can elucidate a proper patient history, as well as future monitoring of adverse effects. With TM, patients have the opportunity to have blood draws wherever is most convenient to them, and have the results sent to their physician by the time of their subsequent virtual encounter.

Premature Ejaculation

TM offers the ability to help patients who feel embarrassed to express their problem in-person. Through the use of online questionnaires and virtual interactions, many patients with PE feel more comfortable discussing their sexual dysfunction using a TM doctor-patient interaction.²⁵

Peyronie's Disease

The diagnosis and management of PD depends on the urologist's ability to assess the curvature of the penis. Through online platforms, patients and physicians can message private and secure

Table 4. List of commonly used “common procedural terminology” (CPT) related to telemedicine

| Common procedural terminology (CPT) | Explanation | Time requirement |
|--------------------------------------|--|--|
| Suggested language | This telehealth visit was conducted via a live, interactive audio-video connection, with the patient at home. Verbal consent to participate in video visit was obtained. This visit occurred during the Coronavirus (COVID-19) Public Health Emergency. I discussed with the patient the nature of our telemedicine visits: I would evaluate the patient and recommend diagnostics and treatments based on my assessment. Our sessions are not being recorded and that personal health information is protected. Our team would provide follow up care in person if/when the patient needs. 2 minutes spent reviewing chart and/or imaging prior to the visit. 18 minutes spent face to face via AV telemedicine connection. 4 minutes spent documenting the visit. 24 minutes total time. | |
| Place of service = 02 Modifier 95 | Place of telemedicine service performed Synchronous telemedicine service rendered via a real-time interactive audio and video telecommunications system | |
| 99201 | Evaluation and management of a new patient in office or other outpatient visit [Level 1] | 10 minutes are spent face to face with the patient and/or family. |
| 99202 | Evaluation and management of a new patient in office or other outpatient visit [Level 2] | Typically, 20 minutes are spent face to face with the patient and/or family. |
| 99203 | Evaluation and management of a new patient in office or other outpatient visit [Level 3] | Typically, 30 minutes are spent face to face with the patient and/or family. |
| 99204 | Evaluation and management of a new patient in office or other outpatient visit [Level 4] | Typically, 45 minutes are spent face to face with the patient and/or family. |
| 99205 | Evaluation and management of a new patient in office or other outpatient visit [Level 5] | Typically, 60 minutes are spent face to face with the patient and/or family. |
| 99211 | Evaluation and management of an established patient in office or other outpatient visit [Level 1] | Typically, 5 minutes are spent performing or supervising these services. |
| 99212 | Evaluation and management of an established patient in office or other outpatient visit [Level 2] | Typically, 10 minutes are spent face to face with the patient and/or family. |
| 99213 | Evaluation and management of an established patient in office or other outpatient visit [Level 3] | Typically, 15 minutes are spent face to face with the patient and/or family. |
| 99214 | Evaluation and management of an established patient in office or other outpatient visit [Level 4] | Typically, 25 minutes are spent face to face with the patient and/or family. |
| 99215 | Evaluation and management of an established patient in office or other outpatient visit [Level 5] | Typically, 40 minutes are spent face to face with the patient and/or family. |

photographs taken by patients of their penile curvature. Now, smartphone applications such as UWPEN are available to patients and physicians as a convenient tool to monitor disease progression. Further assessment of PD can be measured through PD questionnaires that reliably determine the impact of PD on psychological and physical symptoms, penile pain, and symptom bother.²⁸

CONCLUSION

TM is currently a viable option and fills an unmet need for most practicing urologists specializing in sexual/men's health, especially during the COVID-19 pandemic. TM also offers insight to the relative ease of transition to online-based clinical practice and highlights the importance of alternative options for patients who cannot physically enter the clinic. Indeed, various limiting factors and barriers for TM exist; however, these are usually easily overcome for a successful interaction between patient and physician. Sexual/men's health urologists can be the

leaders in the transition to this online format. As this pandemic crisis continues to resolve, urologists should be prepared to transition from face-to-face medical care to the newer methods of health care delivery with TM technology.

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