



Sexual Medicine Society of North America (SMSNA)/American Urological Association (AUA) telemedicine and men's health white paper

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Abstract

Purpose: The purpose of this white paper is to educate health care professionals about the evolution of telemedicine (TM) and to propose a hybrid model that leverages the strengths of traditional in-person medicine as well as virtual medicine while maximizing the safety and quality of men's sexual health care.

Literature Search Strategy: A literature search focused on the use of TM in urology and men's health was performed through PubMed/MEDLINE, Embase, and Web of Science (January 1, 2012–April 26, 2022). Keywords included all known permutations of the terminology used to refer to virtual health, care as well as the terminology used to refer to urologic diseases, issues specific to men's health, and men's sexual health concerns. Publications that emerged after the literature search that met this criterion also were incorporated. Opinion pieces, letters to the editor, meeting abstracts, and conference proceedings were excluded. Additional resources were retrieved, such as governmental technical reports, legislative updates and reviews, and blogs. This search strategy yielded 1684 records across databases after removal of duplicates. Abstracts from the retrieved records were reviewed for relevance. Relevant publications were defined as those that reported data on any aspect of TM use specific to urology, men's health, and/or men's sexual health. If relevance was unclear from the abstract, then the full text of the article was retrieved for a more detailed review. In addition, the published evidence-based practice guidelines relevant to care for erectile dysfunction, Peyronie's disease, ejaculatory dysfunction, and hypogonadism were retrieved. The most common reasons for article exclusions were a focus on TM use in disciplines other than urology and the absence of data (ie, opinion pieces). After exclusions, a total of 91 publications remained and constituted the evidence base for this paper.

Keywords: telemedicine; sexual dysfunction; erectile dysfunction; telehealth; Men's Health.

Telemedicine background

Growth of overall telemedicine market

Telemedicine (TM) is the remote practice of medicine with a synchronous or asynchronous patient interaction by phone or through video.¹ Telephone-based TM has been used for decades by health professionals to provide laboratory results or to discuss acute issues or postoperative events. TM also has been used to increase access to health care for patients in remote areas.² In 2012, 40% of US hospitals were using TM in some capacity.¹ Historically, traditional forms of TM have

focused on clinicians providing information and/or support to patients in the context of an ongoing health care relationship.

Direct-to-consumer (DTC) health care strategies were initiated by US pharmaceutical companies in the 1980s to reduce intermediaries and increase sales and opportunities.³ These strategies are distinct from traditional health care in that medications were marketed directly to potential patients. With technological advances, DTC TM has emerged. DTC TM platforms offer highly branded, patient-initiated treatment by facilitating self-diagnosis and connecting patients to health

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care providers remotely who provide recommendations and often a prescription.^{3,4} DTC platforms often sell and deliver medications directly to patients.⁴

Early DTC TM platforms targeted acute issues, such as upper respiratory or urinary tract infections, providing access to 24-hour virtual treatment handled by primary care providers.³ These platforms have evolved and now offer management for chronic and more complex issues, such as erectile dysfunction (ED), hypogonadism, and male infertility.³ Even prior to the pandemic, there was rapid growth in TM uptake in specialty areas such as the testosterone industry (testing and treatment).⁵

Patient advantages of DTC TM include convenience, privacy, access to self-initiated specialty care, and cost and time savings by avoidance of travel for in-person visits. However, these advantages are potentially offset by disadvantages, including the recommendations from evidence-based practice guidelines for physical examinations for most conditions that affect men.

Pandemic effects on TM uptake

Before the pandemic, TM accounted for <1% of visits across specialties.⁶ In 2015, about 1.25 million DTC TM patient encounters occurred.³ In 2019, a McKinsey Physician survey showed that only 13% of health professionals offered virtual services.⁷

With the emergence of the pandemic in early 2020, limitations on face-to-face visits fueled the rapid integration of TM across institutions and private practices worldwide. TM visits in the United States immediately jumped to 8% of all visits in primary care and 3% of specialist visits.⁶ By May 2021, 88% of patients indicated that they had used a TM service at least once since the beginning of the pandemic.⁷ Among US urology program directors, TM use prior to COVID-19 was 11.1%; during COVID-19, 80% were using some form of TM.⁸ A global urology survey reported that before COVID-19, 15.8% used video TM; during COVID-19, 46.1% used TM.⁹ This increased uptake led to regulatory changes that allowed reimbursement for TM services, including that by the Centers for Medicare and Medicaid Services (CMS).²

Stabilization of uptake

The pandemic now appears to be part of the long-term health care landscape. The initial urgent need to maximize virtual patient contact has decreased, but it has become clear that many types of patient interactions can be safely and effectively managed without in-person visits. As TM reimbursement policies beyond the acute crisis are addressed, the growth of the TM industry is likely to continue. Investment in the needed technological and clinical infrastructure is required to maintain high quality in TM programs.⁶ Enhanced patient access, expanding services, managing chronic care populations, and improved communications can easily lead to improved patient experience and are only some of the benefits of this investment.^{1,6}

TM and urology

The use of TM to deliver urologic care before the emergence of the COVID-19 pandemic was infrequent but demonstrated the feasibility, safety, and acceptability of TM in diverse populations and conditions.¹⁰ From 2010 to 2019, published

studies reported findings on follow-up for men who had undergone prostate cancer treatments,¹¹ triage of individuals with hematuria,¹²⁻¹⁴ general urology,¹⁵⁻¹⁸ incarcerated men with general urologic conditions or testicular pain,^{19,20} follow-up for acute ureteric colic,^{21,22} nursing support for patients using clean intermittent self-catheterization,²³ and incontinence care among nursing home residents.²⁴ A range of outcomes was assessed—efficiency and service logistics (eg, time to obtain an appointment, patient waiting time during the appointment, consult length, time to gain access to recommended procedures), diagnostic concordance with face-to-face assessments, patient safety, cost-effectiveness (for patients and clinics/providers), patient and clinician satisfaction, and environmental impact (eg, carbon footprint evaluation).

Overall, findings were strongly positive: TM modalities reduced the need for face-to-face appointments, decreased appointment waiting times, increased face-to-face appointment availability for urgent conditions, lowered costs for patients and clinics, and reduced the environmental impact of care in the context of high levels of patient and provider acceptance and satisfaction and patient safety.

The emergence of COVID-19 created an unprecedented urgent need to rapidly incorporate TM into medical care to protect patients and clinicians from infection risk. This impetus resulted in the broad implementation of TM across urologic specialties.^{2,25-36} These unique circumstances highlighted the potential for TM to be used safely, effectively, and efficiently to take better care of men specifically. Here we focus on the literature and issues relevant to the incorporation of TM in men's sexual health care.

TM in men's health and sexual health care Pre-COVID-19 studies

Before COVID-19, TM was sparsely implemented. Yet, when it was used to address men's health issues in diverse settings, high levels of patient and provider satisfaction, patient safety, care efficiency, and cost savings were reported.

General urology

TM follow-up of patients who had an initial in-person visit has been reported for men with the following: prostate and other cancers, elevated prostatic-specific antigen, postsurgical follow-up, lithiasis, andrologic issues, benign prostatic hyper trophy/lower urinary tract symptoms, urinary tract infections, genitourinary pain, and hematuria.^{18-20,37,38} Patient satisfaction scores with the clinician were high¹⁸ (4.94 on a 5-point scale). Comparisons between video visits and in-person visits indicated that the 2 groups had similar numbers of postoperative visits (19%, video; 18.8%, in person), similar clinically relevant revisit rates (0.5%, video; 0.67%, in person), and no emergency room visits or hospitalizations within 30 days of the TM appointment for either group.³⁷ In a separate sample, completion rates were similar for video (58%) and in-person (61%) visits, as were cancellation rates (both 33%) and no-show rates (video, 8%; in person, 5%). The average appointment cycle time was significantly shorter for video visits (24 minutes), however, as compared with in-clinic visits (80 minutes).³⁸

In a hybrid protocol, an advanced practice urologic provider on TM partnered with an on-site primary care provider able to perform a physical examination if needed

in a prisoner population.^{19,20} In general urology, follow-up after the initial TM appointment was scheduled for 87% of patients, with 37% as TM only and 50% as in person. There was 90% concordance between the initial TM diagnosis and the in-person follow-up diagnosis with no discordant malignancy diagnoses. Authors estimated that 52% could have been managed entirely by TM.¹⁹ After the initial TM visit in a subgroup with testicular pain, tests were ordered in 78%, 49% were seen in person, 28% had complete management via TM, and 23% were lost to follow-up. At the in-person visit, 98% of TM diagnoses were confirmed. The authors estimated that 85% could have been completely managed by TM alone.²⁰

Fertility

Patients with male infertility (N=56) were followed with TM after an initial in-person visit.³⁹ TM was used to review workup findings, manage medications, provide fertility counseling, and initiate specialty referrals. Over 70 visits, no patient required an unplanned office or emergency room visit within 90 days of the TM appointment, and patients reported savings in the form of limited missed work and lack of transportation costs and the avoidance of a median 80 miles and 97 minutes in travel.

Sexual health

Two studies addressed safety issues with the prescribing of a phosphodiesterase type 5 inhibitor (PDE5i) to young men with ED. Broffman et al reported on the safety of PDE5i (sildenafil or tadalafil) prescribed to a randomly selected cohort of 10 000 men (mean age, 44.8 years) who were treated for ED with DTC services using either asynchronous (78%) or synchronous (22%) care.⁴⁰ Fewer than 2% of patients reported side effects, with no serious adverse events indicated (myocardial infarction, vision or hearing loss, cerebrovascular accident). Rates of any side effect were 1.12% of synchronous patients and 1.44% of asynchronous patients. Shahinyan et al addressed the safety of DTC prescribing by focusing on comorbidity rates among young men.⁴ This study analyzed 388 men with ED seen in an andrology clinic (mean age, 29.5 years). Comorbidities were obesity (15%), prediabetes/diabetes (20%), dyslipidemia (54%), hypogonadism (20%), and subfertility (11%). Semen analysis was performed in 64 men; 40% of analyses were categorized as abnormal. Varicoceles were detected in 35%. PDE5is were prescribed to 88% and additional therapies to smaller proportions of patients. The authors noted that these pathologies would not be detected by DTC questionnaire screening of young men seeking care for ED.

Prostate cancer

The feasibility, efficiency, and acceptability of using video visits vs face-to-face appointments to follow men after radical prostatectomy was evaluated in a randomized controlled trial that compared the 2 types of encounters.¹¹ Video (n=28) and office (n=27) visits were equivalent in terms of time devoted to patient care, patient face time with the clinician, patient-staff face time, and patient waiting time. The groups had similar and high levels of clinician trust, confidence in visit confidentiality, comfort in sharing sensitive information, quality of information provided, and overall satisfaction. The majority of video (88%) and office (76%) patients agreed

strongly that clinicians could provide appropriate care without a physical examination at every appointment. Costs for video patients were significantly lower than for office patients: distance traveled, 0 vs 95 miles; travel time, 0 vs 95 minutes; missed work, 0 vs 1 day; money spent on travel, \$0 vs \$48. Clinicians reported similar and high levels of satisfaction with the 2 types of visits: video at 88% and office at 90%.

COVID-19-era studies

The emergence of COVID-19 created unprecedented pressure on providers and patients to avoid in-person contact if possible and to ensure safety based on the patient's condition. This urgency was most marked in the first year of the pandemic with rapid transitions in all domains of urology to widespread use of TM. With the availability of vaccines and better tools to manage COVID-19 and its variants, some of the urgency has now eased. However, most entities providing urologic health care now have in place systems by which appropriate patients can be seen remotely. The presence of this infrastructure has created the possibility of providing care via TM as part of standard practice. Concerns regarding the necessity for a physical examination remain, though: in a global survey of urologists, 68% noted that at least half of their patient appointments should be conducted in person.⁹

General urology

Multiple studies reported findings from COVID-19–motivated implementation of TM for general urology. These studies focused on men with benign as well as more serious urologic conditions (eg, cancers).^{41–43} Overall, these studies indicated high levels of patient and provider satisfaction, as well as cost and time savings. With regard to cancers, 3 studies published findings, of which 2 noted that large proportions of patients with cancer preferred in-person contact if possible.^{44–46}

Additional aspects of TM evaluated

Two studies reported visit completion rates. Such rates were similar for phone and video visits, with completion significantly associated with morning appointment times, seeing an MD (rather than another type of provider), younger age, and higher income; noncompletion was associated with minority race (Black), older age, and having Medicaid.⁴⁷ However, a study at a safety net hospital found no differences in phone visit attendance based on age or ethnicity, but significant associations were identified between noncompletion and lack of a partner, substance use disorders, and being a new patient.⁴⁸

Several studies reported on clinician perspectives: the methodological weakness of these studies is that only a minority of those queried responded; the validity and generalizability of this information are therefore not known. With regard to clinician TM preferences and feedback, a survey of US urology program directors revealed the need for more training in billing, equipment/software, and communication (reported by 49.6%), but approximately 95% were satisfied with the care provided and most felt able to adequately assess patients (74%–87%).⁸ In a global survey of urologists, most respondents agreed that TM improved patient access to care (55.3%) and provided for care needs (51.3%), but 68% believed that at least half of appointments required in-person visits and only 13.4% noted that TM visits were the same as in-person encounters.⁹ Concerns about the need for a physical examination were also cited in a group of board-certified urologists in Saudi

Arabia (4.5 on a 1-5 Likert scale) and in a survey of the US Society of Urologic Oncology members, most of whom (55%) noted that in-person visits were preferable to TM visits.^{49,50} German private practice urologists concluded that TM was appropriate for follow-up of benign urologic conditions (eg, benign prostatic hypertrophy, incontinence, andrologic disease) but not for initial visits.⁵¹

Sexual health

The literature on sexual health patients is limited. Rabinowitz et al reported on patterns of in-person visit diagnoses (pre-COVID-19, $n=1949$, April 2019) vs video visit diagnoses (COVID-19, $n=608$, April 2020) among male sexual medicine patients.⁵² Video visits were characterized by a 30% increase in ICD-9 codes related to sexual medicine (7.8% vs 4.9% in 2019); there were also significant increases for hypogonadism, testicular/scrotal issues, and penile abnormalities, but the percentage of codes for ED was unchanged. Men aged >60 years with a non-English language preference and low internet speeds were less likely to do a video visit.

Advantages

Numerous advantages to TM have been identified. From the patient perspective, these include the following: potential increased access to care, especially when care is not geographically accessible or logistically feasible (eg, for patients with disabilities); greater ease in getting a timely appointment; time saved by avoiding travel and waiting at the clinic; costs saved by not needing to travel or park and by missing less or no work; avoiding the need to arrange for child care or elder care while absent; and reduced risk of infection in the COVID-19 era. With regard to avoided travel, Filfilan et al documented the positive environmental impact of TM in terms of a reduction in greenhouse gas emissions.⁵³

From the provider perspective, many of the same advantages have been cited: the ability to provide greater care access and more timely care, more efficient use of provider and clinic time, the ability to focus in-person resources on the subset of patients who need in-person visits, and the reduced risk of COVID-19 infection.

Challenges

From the patient perspective, the challenges to using TM are issues that create disparities in health care more broadly. These include living in rural areas without broadband internet capacity, which makes video-driven TM difficult or impossible. Nichols et al addressed this issue in a geospatial analysis that examined associations between broadband internet and urologist density.⁵⁴ Adequate broadband internet coverage was defined as >50% county coverage (data from the 2015 Federal Communications Commission filings; physician density data from the 2016-2017 Area Health Resources Files). At the time that these data were collected, >10.9 million Americans lacked access to local urology care and broadband internet. Counties without urologist access or broadband internet were more likely to be rural and to be designated as whole health professional shortage areas. Overall, one-quarter of communities that lacked access to local urologists also lacked access to broadband internet. Lack of adequate internet access is a major impediment to widespread TM implementation; the resolution of access disparities is a core component of addressing health care disparities.

In addition, having access to an appropriate device, as well as comfort and skill with technology, has been identified as a potential challenge that can create a TM health care disparity. This issue is often correlated with patient age, with older patients being less likely to have the technical skill to navigate a TM interaction. Furthermore, patients with hearing, visual, or cognitive impairments may not be good candidates for care delivered by TM with the current technological options. Improving technological comfort and skill to broaden TM outreach and access requires committed educational efforts and the availability of resources for patients who are least likely to use TM because they struggle with the technology. In addition, the development of simpler technologies that require minimal background knowledge would support broader implementation of TM for patients and providers.

Several studies reported that individuals from racial or ethnic minorities may be less likely to prefer a TM visit. This issue may be intertwined with access to an appropriate device, adequate internet service, and age, as well as with issues of the preferred language and the availability of an interpreter.

It is important to note that, across the cited studies, even when TM services were highly rated by the majority of patients, a substantial subset articulated the preference for a face-to-face interaction with the clinician (range, 9.8%-51.2%). This pattern is most consistent in studies that reported findings from patients with cancer (up to 62.6% preferred an in-person visit).

Historically, from the clinician perspective the greatest challenge to widespread incorporation of TM in the United States was related to issues of reimbursement. This issue was largely addressed in the short term by regulatory changes in response to the COVID-19-motivated shift to TM modalities. Longer-term reimbursement issues are currently being incorporated into regulatory structures and procedures (see Legislative and Regulatory Landscape section).

The other major issue cited in multiple studies as a clinician concern is the need for a physical examination. Even when clinicians agreed that TM visits were satisfactory, a significant proportion noted that they preferred in-person visits for this reason. Desai et al grappled with this issue and presented a framework for having the patient perform a sensitive clinical examination based on 4 principles: establish a clinical need for the remote examination by the patient, obtain informed consent, use a chaperone, and engage in thorough documentation.⁵⁵ It is likely, however, that this procedure would be feasible and appropriate in only a subset of patients.

An additional issue for clinicians is the substantial time and effort required when part of the care process involves various forms of electronic messaging that are separate from the clinical encounter. Responding to patient communications in a timely, efficient, and accurate manner can require the dedication of significant staff resources. Whether and how these activities could generate compensation also is unclear, although several large health systems (eg, Cleveland Clinic) are now engaged in billing for messaging services (<https://www.medpagetoday.com/opinion/second-opinions/103352>).

DTC and men's health

The pandemic normalized the use of TM across a wide spectrum of clinical conditions, including urologic disease states, but a limited range of men's health issues was already being addressed by internet-based DTC services with rapid growth

in engagement and sales long before the emergency of COVID-19. Web traffic to such sites increased by 1688% between 2017 and 2019.⁵⁶ Companies such as Hims and Roman identified a narrow range of sexual disorders (ie, ED and PE), the evaluation and treatment of which are described by widely accepted evidence-based clinical guidelines and could be treated with therapeutic agents that have a minimal-risk profile. The guideline requirements for physical examinations for men with these conditions are not addressed, however.

Almost 90% of all DTC TM visits across all diagnoses are for urinary tract infection, ED, and contraception, of which 20% are for ED.⁵⁷ Some DTC companies offer laboratory orders to be fulfilled at nearby commercial laboratories, and some provide at-home specimen collection kits. Educational content is also readily available on many platforms.

Most companies leverage asynchronous communication platforms to allow patient-provider interaction in an on-demand fashion. They have tools to organize and present medical information to providers that allow rapid, precise review of patient records and support medical decision making and prescribing. They include validated measurement instruments, such as the Sexual Health Inventory for Men, in patient intake forms. There may be live synchronous communication between provider and patient, but it is typically for limited circumstances.

The larger DTC men's health companies have recruited experts in male sexual health to their advisory boards to address quality and safety. They have also incorporated elements of widely accepted clinical guidelines into the patient-screening process to provide automated guardrails that either filter out patients from receiving evaluation and treatment or highlight cautions to providers at the time of evaluation. The result of this safeguard-based intake system allows a provider to process a new patient in approximately 2 minutes—which includes history review, medical decision making, medication prescribing, and feedback to the patient—with a typical reimbursement of about \$15 to \$20 per patient.

The majority of revenue generation for DTC men's health services is derived from the sale of prescription medications, which are typically generic products that, in some cases, the company itself may manufacture. For example, Roman acquired one of the original manufacturing facilities of Viagra to manufacture its generic sildenafil. There may be additional fees for interacting with a medical provider that may be structured as a subscription or per-use pricing (<https://www.profitwell.com/recur/all/hims-roman-pricing>). Although these DTC entities do not typically accept insurance, many customers are uninsured and this understanding informs the pricing. Nonetheless, customers may actually spend more using DTC services than insurance and available coupons.

Providers may include medical doctors, physician assistants, or nurse practitioners who are licensed in the states where the customers are engaged. These providers are not directly employed by the DTC company that sells medications but by a separate company, which then is contracted by the DTC entity to provide clinical services and prescribe the medications sold by the DTC company. According to law, patients may choose to have prescriptions provided to pharmacies of their choice in some instances, in which case revenues from medication sales will not be derived for the DTC company.

The popularity and growth of DTC men's health companies are driven by several factors, including privacy, convenience, access, and cost. When surveyed, a majority of patients report

a preference for going online for information and advice about sexual health rather than meeting with a physician in person.⁵⁸ These men prefer the relative anonymity of the internet when struggling with stigmatized conditions. Furthermore, DTC platforms are able to provide on-demand educational materials and asynchronous medical feedback that patients may review and process in their own time and repeatedly.

Convenience and access are important drivers as well. The asynchronous platforms allow patients to access the service anywhere at any time. In the traditional model, a patient may wait weeks for a new patient visit with a urologist, and almost 70% of US counties do not have a urologist. Online, a new patient may immediately access a DTC male sexual health company, with provider feedback and a prescription often dispatched within 24 hours.

Cost is another driver of the adoption of DTC men's health platforms. There is the opportunity cost of time required to go to the doctor's office, including travel time and cost, missed work or other obligations, and travel to and waiting at a pharmacy. Cost is a compelling driver of adoption for the uninsured. The cost of a new patient visit may be prohibitive for an uninsured individual, but for a fraction of the cost, one may be able to access an online provider and receive treatment. Even for the insured, many will face a deductible obligation that results in a substantial out-of-pocket cost for a new patient-doctor visit. Furthermore, many pharmacies significantly mark up the price of generic PDE5is, and insurance may not cover these medications, making them significantly more expensive than the DTC option if a patient is not able to successfully navigate often obscure discount coupon opportunities.

One of the major limitations of the DTC approach is the lack of a physical examination, which is crucial to identify pathologies, comorbidities, and other common health issues for men, such as benign prostatic hyperplasia. The face-to-face encounter also can be an opportunity for prostate cancer screening and specialist referrals. Most DTC companies do not have a method in place to make referrals directly to other providers, and patients may have to rely on their own initiative to seek further evaluation or treatment. Men who do not receive regular medical care and who may have significant health conditions of which they are unaware (ie, hypertension, diabetes, sexual hormone abnormalities, genitourinary cancers) are especially vulnerable in the DTC care scenario. Another concern is adherence to guideline recommendations for evaluation, diagnosis, and treatment selection. Some companies have partly navigated this issue by incorporating guidelines into their clinical protocols, although the thorough assessment of comorbidities and issues that may be evident only with a physical examination remains unaddressed.

There is the potential for conflicts of interest in DTC health care. The financial incentive for DTC companies to reward providers who overprescribe medication can compromise the practice of medicine. For example, the DTC behavioral health company Cerebral is being investigated for potential issues with clinician licensing in relation to controlled substance prescribing and the possibility that patients created multiple accounts to receive more medication (<https://www.fiercehealthcare.com/health-tech/cerebral-under-federal-investigation-n-possible-violation-controlled-substances-law>). This issue can be mitigated by having a separate administrative structure for the provider organization and the business.

In conclusion, DTC health care is a rapidly growing industry, but it is important to be aware of the limitations and challenges inherent in this model of care. While there are opportunities for growth, it is crucial to ensure that patient safety and ethical considerations are not compromised.

Legislative and regulatory landscape

Regulations governing the practice of TM varied state to state prior to the COVID-19 pandemic. With the onset of COVID-19 and the declared public health emergency (PHE), requirements became more consistent across states. However, careful examination of state-based regulations is important given that, once the PHE period expires, states may default to pre-pandemic regulations. Such requirements, depending on the state, include the need for an in-person visit prior to conducting a TM visit, the need for a “telepresenter” person physically present with the patient, the need for video in addition to audio communication, and various licensing restrictions. Some of these requirements, such as varied state-level licensing requirements, constitute significant barriers to widespread TM implementation. These issues require systemic solutions to leverage the promise of TM to create broader health care access in general but especially for underserved individuals who are geographically isolated from care.

During the PHE, reimbursement for TM was universally mandated by states with regard to private payors and Medicaid. Reimbursement typically extended to video as well as phone visits. CMS also relaxed regulations surrounding the provision of TM and TM reimbursement with waivers that went into effect with the declaration of the PHE. Prior to the PHE, the originating site for a TM encounter had to be in a designated facility and typically in a designated geographic region, such as a remote rural location. Furthermore, only audiovisual communications were reimbursed and at a discount, and just HIPAA-compliant platforms (Health Insurance Portability and Accountability Act) could be deployed. During the PHE, the originating site of service has been broadened to include a patient’s home; TM visits are reimbursed at parity to in-person office visits; and telephone-only visits are reimbursed as well. TM platforms do not have to be HIPAA compliant as long as they are not outward facing; however, it is likely that this flexibility will end with cessation of the PHE.

In addition, the 2021 CMS E and M coding updates allow the complexity of medical decision making instead of physical examination elements to factor into the patient encounter coding level. TM visits can be billed, therefore, at an appropriate level based on clinical complexity. In fact, physicians spent more time with postoperative patients during video visits (mean, 13.8 minutes) as compared with in-person visits (mean, 10.2 minutes).⁵⁹ This revision enables coding to better reflect the value of a TM encounter that does not include a physical examination but requires chart review and preparation just as for an in-person encounter.

Once the PHE declaration ends, the waivers will expire in 151 days. The expiration would trigger a return to the regulations and restrictions in place prior to the PHE, which would in turn greatly constrict TM services. Because TM has demonstrated value, the consensus among legislators and providers is to preserve it, but exactly how is yet to be determined. Permanent waivers require congressional legislation.

The recently passed Federal FY 2023 Omnibus Bill/Consolidated Appropriations Act 2023 legislates a 2-year extension for TM Medicare services.⁶⁰ These include

- Expanding the patients’ originating and geographic visit site to include anywhere the patient is located, including the patient’s home
- Expanding eligible practitioners qualified to furnish telehealth services, including occupational therapists, physical therapists, speech-language pathologists, and audiologists
- Extending the ability for federally qualified health centers and rural health clinics to furnish telehealth services
- Delaying the in-person requirement for mental health services furnished through telehealth, including the in-person requirements for federally qualified health centers and rural health clinics
- Extending coverage and payment for audio-only telehealth services
- Extending the Acute Hospital Care at Home initiative and requiring the secretary of the US Department of Health and Human Services to publish a report comparing Acute Hospital Care at Home programs with traditional inpatient care delivery
- Extending the ability to use telehealth services to meet the face-to-face recertification requirement for hospice care
- Extending safe harbor exceptions for telehealth services in high-deductible health plans

Importantly, payment parity is not codified in this legislation. In addition, the Department of Health and Human Services will study TM services delivered from January 1, 2022, through December 31, 2024, to evaluate program integrity related to Medicare Part B. The study will analyze the duration, type, and impact of TM services furnished on the future utilization of health services by Medicare beneficiaries. An interim report is due to Congress on October 1, 2024, and the final report is due April 1, 2026. Also included were an extension of the Acute Hospital Care at Home initiative, which provides for a patient’s home or temporary residence to be considered an originating site for the provision of certain hospital services through December 31, 2024, and an extension of the policy that allows employers and plans to provide coverage of TM services per deductible for individuals with a high-deductible health plan coupled with a health savings account through December 31, 2024.

The legislation addresses the disparity in TM access by race, ethnicity, and geographic location, requiring an interdepartmental effort to analyze the state of disparities, including broadband access and implementation of improvements to TM access. CMS is required to report in the fiscal year 2024 Congressional Budget Justification on the impact of TM on health care access, utilization, cost, and outcomes, broken down by race, ethnicity, sex, age, disability status, and zip code under Medicaid and the Children’s Health Insurance Program.

Fraud and abuse

Fraud and abuse are common health care concerns and were considered a significant risk to the liberalization of TM. Prior to the PHE, restrictions on TM were likely driven to some degree by concern for overutilization and cost. The 2022 Office of the Inspector General report highlights that of 742 000 providers serving Medicare patients using TM, 1714

were flagged as having high-risk billing practices, meaning that 0.2% were flagged as potentially engaging in fraud.⁶¹

CMS reported that internal review of TM claims has not demonstrated significant fraud and abuse, and the majority of published studies show that TM provides care that is substitutive but not duplicative in urology and across all specialties when excluding DTC TM companies.

Federal legislation

At the writing of this position paper, multiple TM-related bills were moving through Congress. A regularly updated federal telehealth tracker can be found at <https://connectwithcare.org/telehealth-legislation/>.

State bills and licensing

At the state level, numerous bills are introduced each year, the majority of which never become law, but careful understanding of changes in state law following the end of the PHE is important for providers. The American Urological Association (AUA) State Advocacy webpage tracks state-level legislation and can be filtered by that related to TM specifically: <https://www.auanet.org/advocacy/state-advocacy>

State licensing restrictions on the practice of TM have been relaxed in many states but only as long as the PHE is in effect. As of December 16, 2022, 42 states and the District of Columbia have ended their emergency declarations, and 9 states still have licensure flexibilities in place. The Alliance for Connected Care, a TM health advocacy organization, has a state telehealth and licensure dashboard, which is updated regularly to reflect changes in licensure (<https://connectwithcare.org/state-telehealth-and-licensure-expansion-COVID-19-chart/>).

A more permanent strategy to improve flexibility across state lines for patients and providers is in part accomplished with the Interstate Medical Licensure Compact, in which the majority of states participate. As of January 2023, the Interstate compact included 37 states, the District of Columbia, and Guam. However, prior to March 2020, 0.4% of physicians living in eligible states had used the compact to obtain a license elsewhere (there is still a fee to obtain a license in another state, not just reciprocity).⁶² Universal licensure is a topic of discussion among legislators. Veterans Affairs allows TM provision across state lines.

Men's sexual health: individual disease states and guideline-concordant care

Areas of men's sexual health that can be addressed with TM modalities include ED, Peyronie's disease (PD), ejaculatory dysfunction, and hypogonadism. Evidence-based practice guidelines on these topics provide a framework to structure valid and safe evaluation and diagnosis, treatment, and follow-up. For the most part, these processes can be carried out via TM in concordance with guideline requirements, but in nearly all cases, the relevant guidelines require a physical examination as part of evaluation or the administration of treatments in an in-office setting. In our view, men pursuing health care for sexual health issues require a physical examination from a specialist in that area. That individual has the necessary training and experience to perform a valid sexual health care assessment. This focused training and experience

may not be available from practitioners with more generalized backgrounds.

Erectile dysfunction

ED is the consistent or recurrent inability to attain and/or maintain a penile erection that is adequate for satisfactory sexual performance.^{63,64} ED is classified as psychogenic, organic, or mixed based on its etiology. Psychogenic ED may occur in response to psychological factors such as performance anxiety, depression, and stress. In contrast, organic ED results from the physiologic inability to increase blood flow to the corpus cavernosum to achieve sufficient penile erection. Like many diseases affecting sexual performance, ED affects not only the men experiencing the condition but also their partners.

Up to 18 million men in the United States may be affected by ED. ED prevalence among sexually active men ranges from 5.6% to 18.4%.^{65,66} ED prevalence increases with age, with the presence of comorbidities such as diabetes and hypertension, and is highly prevalent among men who have had prostate cancer treatment.^{65,66} ED also appears to be a marker for the presence of other underlying health problems, such as cardiovascular disease, diabetes mellitus, and depression.⁶⁷ The consultation for ED diagnosis and treatment therefore provides an opportunity to more broadly address the health and wellness of men. There are significant gaps in access to ED care, however. Most men with ED report that they are not receiving any ED treatment.⁶⁸ Telehealth provides a means to address this gap.

There is general consensus between the AUA and European Association of Urology (EAU) ED treatment guidelines regarding how to approach ED diagnosis.^{63,69} Both guidelines recommend a detailed medical, sexual, and psychosocial history, as well as the use of validated ED questionnaires, a physical examination, and selective laboratory testing that includes morning serum total testosterone (Table 1). The guidelines differ in treatment framework. The EAU guideline recommends a tiered care framework in which penile prostheses are offered only after persistent inadequacy of other therapies. The AUA guideline advocates offering all patients all potential treatment options.

TM presents some challenges to guideline-adherent diagnostic procedures and treatment approaches. Patient history taking, the administration of validated ED self-report instruments, orders for laboratory testing, referrals to specialists (eg, sex therapists), counseling about ED as a cardiovascular disease risk marker and the relevance of lifestyle changes, and referral for cardiac evaluation can be readily accomplished via TM. Yet, a thorough physical examination requires inspection, palpation, and auscultation, which can be performed only during an in-office encounter, and complex cases may require in-office diagnostic procedures such as vascular studies. With regard to treatment, the following can be accomplished via TM: counseling about options, the provision of scripts for PDE5i and vacuum devices, and helping patients problem-solve if initial treatment attempts are not satisfactory. Treatment options such as intracavernosal injections and intraurethral alprostadil require initial in-office visits, however, and shockwave therapy (for vasculogenic ED per the EAU guideline) and penile prosthesis surgery require the use of a treatment facility.

There are significant discrepancies between ED guideline-concordant care and commercial DTC TM approaches. Physicians working for DTC telehealth companies do not routinely

Table 1. Erectile dysfunction evaluation and diagnosis.

EAU guideline	AUA guideline	Feasible with telehealth
Medical, sexual, and psychosocial history	Medical, sexual, and psychosocial history	Yes
Use of validated self-report instruments	Use of validated self-report instruments	Yes
Physical examination	Physical examination	No
Glucose-lipid profile and morning serum total testosterone	Selective laboratory testing, including morning serum total testosterone; additional tests may include serum BUN/creatinine, metabolic profile, thyroid function, prostatic-specific antigen	Yes
Additional diagnostics for complex cases; may include nocturnal penile tumescence/rigidity (RigiScan), vascular studies, specialized endocrine studies, formal psychodiagnostic evaluation	Additional diagnostics for complex cases; may include nocturnal penile tumescence/rigidity (RigiScan), vascular studies, biothesiometry	Referral—yes Performance of most tests requires in-office visits
Counseling regarding ED as a marker for CVD risk; referral for cardiac evaluation based on Princeton III criteria	Counseling regarding ED as a marker for CVD risk; referral for cardiac evaluation based on Princeton III criteria	Yes
Treatment		
Counseling about all treatment options	Counseling about all treatment options	Yes
Tiered care	Offer all potential treatment options to all patients	Provision of scripts for PDE5i or vacuum devices—yes Counseling to problem-solve initial lack of treatment efficacy—yes Other treatments require initial in-office visits or referrals
1. For most patients: offer oral PDE5i, intracavernosal injections, vacuum device, topical/intraurethral alprostadil		
2. For vasculogenic ED: offer LI-SWT with or without PDE5i		
3. For patients who have inadequate treatment outcomes, counsel, retry therapies, change treatments, combine treatments		
4. For persistent inadequate treatment outcomes, offer penile prosthesis		

Abbreviations: AUA, American Urological Association; BUN, blood urea nitrogen; CVD, cardiovascular disease; EAU, European Association of Urology; ED, erectile dysfunction; LI-SWT, low-intensity shockwave treatment; PDE5i, phosphodiesterase type 5 inhibitor.

order laboratory tests before prescribing PDE5i treatments,⁷⁰ despite the fact that patients with testosterone deficiency can benefit from testosterone replacement in addition to PDE5i therapy and that treatable comorbidities that contribute to ED are readily diagnosable (eg, lipid disorders and diabetes). In addition, the opportunity to address men's health more broadly in terms of lifestyle changes is not considered. Furthermore, potential breakdown of the physician-patient relationship in this model of health care delivery may present challenges in monitoring side effects or improvements in ED symptoms related to treatment.⁷¹ DTC companies (ie, Roman, Hims) performed poorly when evaluated against the AUA ED guideline diagnostic and treatment framework, scoring an average <2.5 of 5 for diagnosing and treating ED.⁷² Reasons for this low rating included the lack of a physical examination and laboratory testing. Additionally, these programs did not include discussions of non-PDE5i treatments.³

Peyronie's disease

PD is another relatively common condition affecting men's sexual health. PD is a chronic condition characterized by the development of fibrous scar tissue in the penis.⁷³ Patients with PD often experience curved and/or painful erections, pain, and interference during intercourse. PD affects up to 11% of adult males in the United States.⁷⁴ Traditionally, PD is diagnosed with a combination of a palpable plaque and patient-reported pain or deformities.⁷⁵

There are significant gaps in access to care for the evaluation and treatment of PD which is underdiagnosed and undertreated.⁷⁶ DTC platforms have not ventured into the diagnosis and treatment of PD.

There is general consensus between the AUA and EAU guidelines in terms of diagnosing PD (Table 2).^{63,75} Both

guidelines recommend a detailed history to distinguish between active and stable disease and to determine whether symptoms include ED. The EAU guideline also advocates the use of the Peyronie's Disease Questionnaire. These diagnostic components are readily accomplished via TM. However, both guidelines require a rigorous physical examination to document disease state and to assess for comorbid conditions (eg, Dupuytren's contracture) which requires an in-person encounter. Both guidelines also require objective assessment of penile curvature which may be accomplished by patient photography at home (with or without use of a vacuum device). The AUA guideline notes that if invasive therapies are planned then the use of intracavernosal injection is necessary to assess curvature, plaques, and pain and in patients who report change in penile sensation, biothesiometry should be performed. Both guidelines note that vascular studies to document ED are appropriate in complex patients. These assessment methods require in-person visits.

There is less complete concordance between the guidelines for treatment approaches. For acute disease, the EAU guideline recommends the use of PDE5i and/or oral non-steroidal anti-inflammatory drugs; the AUA guideline recommends only oral nonsteroidal anti-inflammatory drugs. Scripts for these treatments can be provided via TM. For stable disease, the EAU guideline recommends intralesional injections with collagenase *Clostridium histolyticum*, interferon alpha-2b, or hyaluronic acid. The AUA guideline recommends intralesional injections with collagenase *C histolyticum* in combination with clinician/patient modeling, interferon alpha-2b, or verapamil. Both guidelines note that the use of shockwave treatment is appropriate to ameliorate pain (but not curvature or plaques). Both guidelines also list several acceptable surgical procedures including the use of a penile

Table 2. Peyronie’s disease evaluation and diagnosis.

EAU guideline	AUA guideline	Feasible with telehealth
Focused medical and sexual history to distinguish between active and stable disease	Medical, sexual, and psychosocial history	Yes
Use of validated self-report instruments	NA	Yes
Physical examination	Physical examination	No
Objective assessment of penile curvature by patient photograph taken at home, use of a VED, or ICI (preferred)	Home photography of curvature may be adequate for some patients If invasive therapies are planned, then ICI to assess curvature, plaques, and pain	Home photography and VED—yes ICI—no
Additional ED diagnostics for complex cases or if surgery is planned (eg, vascular studies)	Additional diagnostics may include duplex ultrasound to assess plaque size, density, calcification, and vascular integrity in patients who report ED Biothesiometry for patients who report change in penile sensation when invasive therapy is planned	Referral—yes Performance of most tests requires in-office visits
Treatment		
Counseling about all treatment options	Counseling about all treatment options	Yes
Active phase:	Active phase:	Provision of scripts for PDE5i or NSAIDs—yes
1. Oral PDE5i	1. Oral NSAIDs	Treatments for stable disease require in-office visits
2. Oral NSAIDs	Stable phase:	
Stable phase:	1. Intralesional collagenase <i>Clostridium histolyticum</i> with clinician/patient modeling	
1. Intralesional collagenase <i>Clostridium histolyticum</i>	2. Intralesional interferon alpha-2b	
2. Intralesional interferon alpha-2b	3. Intralesional verapamil	
3. Intralesional hyaluronic acid	4. Extracorporeal shockwave treatment to treat pain	
4. Extracorporeal shockwave treatment to treat pain	5. Surgical treatments—tunical plication, plaque incision/excision and/or grafting, penile prosthesis	
5. Multimodal treatments		
6. Surgical treatments—tunical shortening, tunical lengthening, penile prosthesis		

Abbreviations: AUA, American Urological Association; EAU, European Association of Urology; ED, erectile dysfunction; ICI, intracavernosal injection; NA, not applicable; NSAID, nonsteroidal anti-inflammatory drug; PDE5i, phosphodiesterase type 5 inhibitor; VED, vacuum-assisted device.

prosthesis. All of the treatments for stable disease, therefore, require clinician-patient encounters.

The broader incorporation of PD diagnosis and treatment into TM procedures is complicated by the guideline-required need for a physical examination, the importance of the physical examination to determine the therapy most likely to be effective for a particular patient, and the potential need for additional in-office diagnostic procedures. In addition, although prescriptions for oral medications in the acute phase can be provided via TM, all of the treatments for stable disease require in-office visits.

New tools have emerged since the publication of the guidelines that may partly address these issues. Mobile applications such as the University of Washington Peyronie’s Examination Network or the recently released Endo International Peyronie’s disease self-assessment⁷⁷ could be used as an alternative noninvasive means of assessing penile deformity in PD.^{78,79} Such methods could be integrated into the TM diagnostic process and used for follow-up. The existence of these methods, however, cannot provide the same depth and accuracy of information as a focused physical examination by an experienced clinician and objective diagnostic procedures.

Hypogonadism

Hypogonadism is defined by the AUA as 2 early-morning measurements of total testosterone <300 ng/dL taken on separate occasions combined with symptoms and/or signs.⁸⁰ The EAU defines hypogonadism similarly—termed *late-onset hypogonadism* and defined as total testosterone <12 nmol/L or 3.5 ng/mL on 2 separate morning samples with associated

signs and symptoms.⁶³ Testosterone testing and prescriptions have increased exponentially in recent years, reflecting the increasing awareness and interest in this condition from patients and health care professionals.^{81–83} From a clinical perspective, men undergoing testosterone therapy may be an appropriate group for TM because much of the initial assessment and follow-up protocols recommended by the AUA and EAU consist of laboratory testing. Both guidelines do require an initial physical examination, however. In addition, the EAU recommends repeat physical examinations at 3 and 12 months during the first year of testosterone therapy and then annually. The necessity for a physical examination (eg, to check blood pressure in particular) must be considered, given that most new approved testosterone replacement therapy modalities carry a box warning on hypertension related to therapy.^{84,85}

Similar to ED, the diagnosis of hypogonadism provides an opportunity to more broadly address men’s health, given the comorbidity of this condition with treatable metabolic conditions. Although these issues may be detected with laboratory work, an in-person visit is valuable to document weight, body mass index, waist circumference, and other signs suggestive of metabolic dysregulation. Additional complexity is presented by the medicolegal implications⁵ of testosterone’s status as a Schedule III substance according to the US Food and Drug Administration.⁸⁰ Requirements for online prescribing of controlled substances vary by state, and out-of-state prescribers may have additional regulations.

There is some concordance between the AUA and EAU guidelines regarding the diagnostic and treatment approaches for hypogonadism (Table 3). The greatest divergence is in the area of follow-up: the EAU recommends explicit and detailed follow-up beyond periodic laboratory work (Table 4).

Table 3. Hypogonadism evaluation and diagnosis.

EAU guideline	AUA guideline	Feasible with telehealth
Detailed medical and sexual history	Detailed medical and sexual history	Yes
Physical examination	Physical examination	No
Measure fasting and morning total T in symptomatic men; repeat total T if initial value is <12 nmol/L (3.5 ng/mL)	Measure morning total T in men with symptoms or signs of potential T deficiency on at least 2 occasions; total T < 300 ng/dL supports diagnosis of T deficiency	Yes
Additional diagnostics for complex cases (eg, sex hormone-binding globulin, free T calculation, LH, follicle-stimulating hormone, PRL; pituitary MRI)	If low total T, then measure LH; if LH is low, then measure PRL; if PRL is high, then pursue endocrine evaluation	Yes
	Measure hemoglobin and hematocrit	
	Measure PSA in men aged >40 y	
Treatment		
Counseling about expected benefits and risks of treatment options	Counseling about expected benefits and risks of treatment options	Yes
Symptomatic men with mild ED—T therapy	Adjust T dosing to achieve total T in the middle of the reference range	Yes
Symptomatic men with more severe ED—T therapy with PDE5i		
Conventional medical therapies for severe depression and osteoporosis		
Scheduled follow-up (see Table 4)	Scheduled follow-up: • Measure initial follow-up total T level after appropriate interval to achieve target • Measure total T every 6–12 mo • Consider cessation of T therapy 3–6 mo after treatment beginning in men who have normal T levels but no change in symptoms/signs	Laboratory work and imaging—yes Physical examination components—no (eg, BMI, waist circumference, DRE, blood pressure)

Abbreviations: AUA, American Urological Association; BMI, body mass index; DRE, digital rectal examination; EAU, European Association of Urology; ED, erectile dysfunction; LH, luteinizing hormone; MRI, magnetic resonance imaging; PDE5i, phosphodiesterase type 5 inhibitor; PRL, prolactin; PSA, prostate-specific antigen; T, testosterone.

Table 4. Follow-up recommendations from the EAU for men on testosterone therapy.

Parameter	Baseline	Year 1 of treatment			After year 1 of treatment	
		3 mo	6 mo	12 mo	Annually	18–24 mo
Clinical						
Symptoms	×	×	×	×	×	NA
BMI	×	NA	NA	×	×	NA
Waist circumference	×	×	NA	×	×	NA
DRE	×	NA	NA	×	×	NA
Blood pressure	×	×	NA	×	×	NA
Biochemistry						
PSA, ng/mL	×	×	× ^a	×	×	NA
Hematocrit, %	×	×	× ^{a,b}	×	×	NA
Testosterone	×	×	NA	×	×	NA
Lipid and glycemic profile	×	NA	NA	×	×	NA
Instrumental						
DEXA	×	NA	NA	NA	NA	×

Abbreviations: BMI, body mass index; DEXA, dual-energy x-ray absorptiometry; DRE, digital rectal examination; EAU, European Association of Urology; NA, not applicable; PSA, prostate-specific antigen. ^a Survivors of prostate cancer. ^b Population with polycythemia vera or at high risk of secondary polycythemia (eg, sleep apnea, morbid obesity, heavy smokers, chronic obstructive pulmonary disease).

Ejaculatory dysfunction

Ejaculatory dysfunction is bothersome, distressing, and non-life-threatening and may be well suited for TM. Ejaculatory dysfunction includes premature and delayed ejaculation (DE). Lifelong PE is defined by the AUA/Sexual Medicine Society of North America (SMSNA) as poor ejaculatory control, associated bother, and ejaculation within approximately 2 minutes of initiation of penetrative sex that has been present since sexual debut.⁸⁶ Acquired PE is defined as ejaculation latency that is markedly reduced from prior penetrative sexual experience. The EAU guideline defines PE as ejaculation that always

or nearly always occurs prior to or within approximately 1 minute of vaginal penetration (lifelong PE) or the experience of a clinically significant and bothersome reduction in latency time to about ≤3 minutes (acquired PE).⁶³ The definition of both conditions requires the inability to delay ejaculation on all or nearly all vaginal penetrations and negative personal consequences such as distress, bother, frustration, and/or the avoidance of sexual activity. The AUA/SMSNA guideline defines DE as the bothersome inability to achieve ejaculation or excessive ejaculation latency, despite adequate sexual stimulation and desire to ejaculate; the condition is categorized as

Table 5. Ejaculatory dysfunction evaluation and diagnosis.

EAU guideline	AUA/SMSNA guideline	Feasible with telehealth
Detailed medical and sexual history <i>PE:</i> Physical examination for initial assessment to identify anatomic abnormalities or other sexual dysfunctions (ie, ED) <i>DE:</i> Physical examination to identify potential medical pathologies that could contribute to DE <i>PE:</i> Patient/partner report of time to ejaculation, perceived degree of ejaculatory control, degree of bother/stress <i>DE:</i> Sex therapist may be necessary for psychological evaluation in DE <i>PE:</i> Laboratory testing—if prompted by specific findings on history or physical examination <i>DE:</i> NA	Detailed medical and sexual history <i>PE:</i> Physical examination—optional <i>DE:</i> Physical examination to identify relevant comorbidities <i>PE:</i> Validated questionnaires—optional <i>DE:</i> NA <i>PE:</i> Laboratory testing—as necessary in acquired PE to assess comorbidities <i>DE:</i> Morning total testosterone, additional laboratory tests if signs/symptoms suggest neuropathy or vascular disease	Yes No Yes Yes
Treatment Counseling about expected benefits and risks of treatment options <i>PE:</i> If PE is secondary to ED, then treat ED first or concomitantly <i>Lifelong PE:</i> <ul style="list-style-type: none">• On-demand dapoxetine or lidocaine/prilocaine spray• Off-label: on-demand tramadol or daily antidepressants (SSRIs or clomipramine)• Combination treatment—pharmacotherapy with behavioral therapy• Hyaluronic acid injection (use with caution) <i>Acquired PE:</i> behavioral, cognitive, and/or couples therapy approaches; mindfulness exercises; may combine with pharmacologic treatments <i>DE:</i> Behavioral and psychological interventions (may require sex therapist)	Counseling about expected benefits and risks of treatment options <i>PE:</i> <ul style="list-style-type: none">• Treat ED if present• First-line treatments: daily SSRIs, on-demand clomipramine or dapoxetine, or topical penile anesthetics (lidocaine, prilocaine)• Second-line treatments: on-demand tramadol, alpha 1 adrenoreceptor antagonists• Combination pharmacologic and behavioral treatments <i>DE:</i> <ul style="list-style-type: none">• Consider referral to mental health professional with expertise in sexual health• Behavioral interventions (modified sexual positions/practices to enhance arousal)• Replacement, adjustment, or cessation of medications that contribute to DE• Testosterone therapy in men with deficiency• Treat ED if present	Yes Yes

Abbreviations: AUA, American Urological Association; EAU, European Association of Urology; DE, delayed ejaculation; ED, erectile dysfunction; NA, not applicable; PE, premature ejaculation; SMSNA, Sexual Medicine Society of North America; SSRI, selective serotonin reuptake inhibitor.

either lifelong or acquired. DE is not explicitly defined in the EAU guideline; however, the American Psychiatric Association definition is cited, which requires marked delay of ejaculation or infrequency or lack of ejaculation on 75% to 100% of occasions with accompanying distress.

Both guidelines recommend a detailed medical, relationship, and sexual history (Table 5). For PE, the EAU recommends a physical examination to assess for anatomic abnormalities or other sexual dysfunctions (ie, ED); the AUA/SMSNA notes that physical examination is optional. For DE, both guidelines recommend a physical examination to identify issues that could contribute to the condition. In addition, for DE the EAU guideline states that involvement of a sex therapist may be a necessary component of the evaluation. Both guidelines recommend selected laboratory testing for PE if prompted by specific history or physical examination findings or suspicion of relevant comorbidities. The AUA/SMSNA guideline recommends morning total testosterone measurement in men with DE and other laboratory testing as indicated by signs/symptoms; the EAU does not recommend laboratory work for DE.

The treatment protocols for PE and DE are both amenable to the use of TM. For PE, both guidelines recommend the use of medications as well as combining pharmacologic therapies with behavioral treatments. For acquired PE, the EAU

guideline recommends the initial use of behavioral, cognitive, and/or couples therapy approaches with possible use of medications. For DE, both guidelines emphasize the use of behavioral approaches and the need for a sex therapist. The AUA/SMSNA guideline additionally advocates testosterone therapy in men who are deficient.

Areas for expansion and future directions

TM has revolutionized the way in which medical care is provided to patients. The technology not only has made it possible for people to receive care from the comfort of home but has created opportunities for the diagnosis and treatment of a variety of conditions. It also has significant potential to provide enhanced access to care and services beyond the physical locations traditionally offered by traditional medicine. Combining the strengths of TM with the strengths of traditional in-person medicine, when necessary, to accomplish valid and safe care is a powerful new model of medicine (Figure 1).

With regard to men’s sexual health, TM provides a convenient private platform for men to discuss their sexual health symptoms with a medical professional. Access to remote care may be especially important for men who feel stigmatized by sexual health issues or are embarrassed to talk about their concerns face-to-face. A TM visit can include an evaluation,

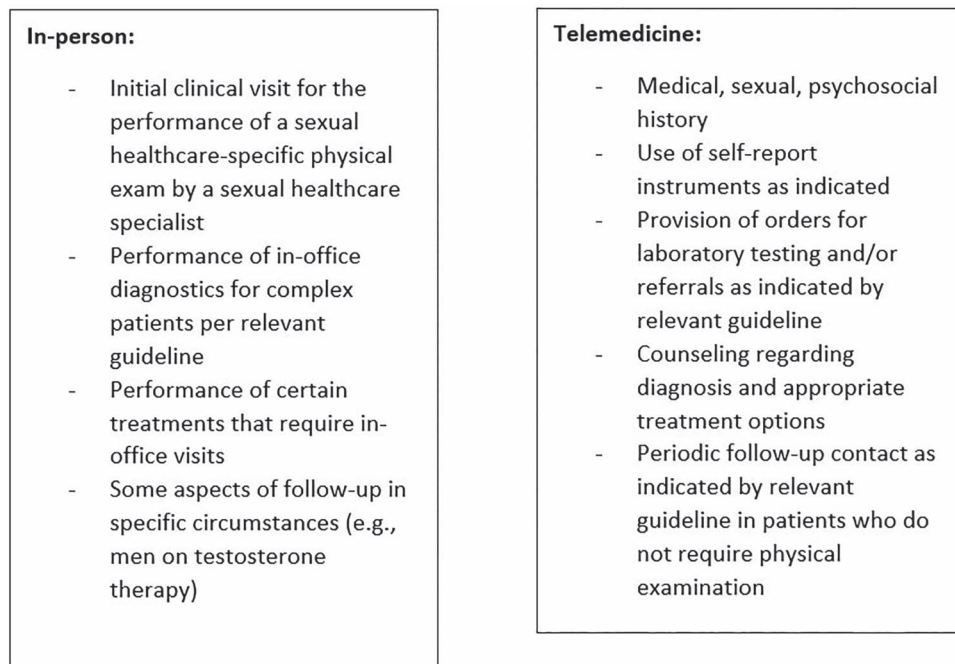


Figure 1. Hybrid model of men's guideline-concordant sexual health care.

a diagnosis, the provision of treatment, and thorough patient counseling as well as scheduled follow-up. TM also has made it possible for men to receive specialist care with shorter appointment waiting times and without having to travel long distances. This option is particularly important for rural and remote communities, where access to specialized care can be limited, and it may be relevant for individuals with heightened sensitivity to stigma and a history of discrimination, such as those from the LGBTQ+ community. In addition, men with chronic sexual health conditions can receive ongoing care, symptom and adverse event monitoring, and adjustments to treatment protocols on TM. Furthermore, TM has the potential to improve men's sexual health by providing ready access to preventive care, resulting in greater uptake of prevention medicine. With remote consultations and monitoring, men can receive regular check-ups and be reminded about the importance of healthy lifestyle choices and behaviors that can prevent sexual health problems from developing. The integration of TM with wearable technology such as fitness trackers and smartwatches will provide men with more opportunities to monitor their sexual health and receive remote care. With wearable technology, health care professionals can monitor patient data in real time and provide timely interventions if necessary.

More broadly, TM has the potential to provide education about sexual health and encourage healthy sexual behaviors. These opportunities include the provision of information about safe sexual behaviors as well as the facilitation of detection and treatment of sexually transmitted infections (STIs). The Centers for Disease Control and Prevention's surveillance data indicate that STIs and HIV incidence spiked a few months after the pandemic began in the United States, especially in underresourced communities. Data collected across the United States showed a dramatic reduction in HIV and STI testing and prevention care during the pandemic as compared with the pre-COVID-19 period.⁸⁷ The provision of online testing for STIs has been shown to almost double the uptake of STI

tests and e-contraception (the oral contraceptive pill can be ordered online).⁸⁸

In addition, TM is feasible and acceptable for persons with HIV infection and is an effective way to expand HIV care, particularly in rural or remote settings and among hard-to-reach populations, such as those who are incarcerated. The remaining stigmas around AIDS act as a barrier to in-person care that TM can assist in overcoming. In a review of 99 studies, mobile-based health services were shown to significantly improve antiretroviral therapy adherence and clinic attendance rates.⁸⁹

As TM options for sexual medicine increase, the demand for online sex therapy is likely to increase as well. Prior to the 2020 COVID-19 epidemic, relatively few sex therapists were engaged in teletherapy; that number has increased substantially, with sex therapists now reporting that teletherapy has become a frequently requested and commonly engaged-in treatment modality.⁹⁰ Online psychotherapy for conditions such as depression and anxiety was comparable in efficacy to in-person psychotherapy in a recent meta-analysis, and studies of the utility of sex therapy have recently begun to appear in the literature.⁹¹ Matthew et al reported that online sex therapy services are highly acceptable to patients, as defined by substantial intervention adherence and engagement.⁹² While further studies are needed, those currently available suggest high levels of patient satisfaction and symptom resolution.

While TM has shown tremendous potential in transforming the landscape of men's sexual health, there are still questions and considerations regarding its future application. The reliance on remote consultations and the absence of physical examinations pose challenges in conducting a comprehensive evaluation, particularly when linking sexual problems to underlying medical pathologies. The importance of a thorough medical assessment and the potential risks associated with removing physical examinations cannot be overlooked. Therefore, there is a need to explore innovative solutions and technologies that can bridge this gap and ensure the

delivery of complete care that encompasses remote consultations and in-person assessments. Striking the right balance among convenience, patient satisfaction, and sound decision making remains a critical task for clinicians in the field of sexual medicine. As the field continues to evolve, it is essential to navigate these challenges and embrace TM as a complementary tool that enhances, rather than replaces, traditional care models, ensuring the best possible outcomes for patients.

In conclusion, the role of TM in men's sexual health is expected to continue to grow. The technology offers new avenues for the treatment of sexual health issues and can improve access to care, increase preventive care, and promote awareness and education about sexual health. As TM continues to evolve, it will further enhance access to care and provide new opportunities for men to take charge of their sexual health and well-being.

Strengths, limitations, and clinical implications

There are several strengths of this white paper. These include a thorough review of the pre- and post-COVID-19 TM literature relevant to men's sexual health care that maps the emergence of TM, its urgent implementation in the context of COVID-19, and the current stabilization of use. The technological challenges to the equitable expansion of TM also are noted. In addition, this paper provides an up-to-date synopsis of regulatory and licensure issues post-COVID-19. Furthermore, a proposed hybrid guideline-concordant model of care is described, focused on men's sexual health and the broader health issues faced by men through the advantages offered by virtual and traditional medicine. Limitations include the fact that this paper provides a snapshot of the current TM landscape; the TM modality is rapidly and constantly evolving. The clinical implications of our literature review and hybrid guideline-concordant model of care are that the safest and highest quality of care for men requires periodic in-person visits with a clinician to carry out a valid diagnostic process and perform appropriate follow-up.

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All authors were involved in the conceptualization, writing of the original draft, and the writing and review process. M.F. contributed 30% of the work to writing the original draft, with the remaining authors equally contributing to the remaining 70%.

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J.M.: Consultant—Ro. Editor in chief—*Journal of Sexual Medicine*. Practice Guideline Committee—AUA. R. Rubin: Medical advisor—Absorption Pharmaceuticals. Speaker—Sprout. Research funding—Materna Medical. A.S.: Consultant—Foresight Imaging, 2nd MD, Contraline, Mosie Baby. Lecturer—AbbVie. F.Y.: Advisory board—Coloplast, Halozyne, Promescent, Xialla. Consultant—Cynosure, Sprout. Intellectual property—Masimo. Speaker—Coloplast, Halozyne. All other authors: None declared.

Data availability

Data are available from the authors upon reasonable request.

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