



Challenges in Utilizing Telehealth for Chronic Pain

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Abstract

Purpose of Review Chronic pain in the USA has presented with higher prevalence rates among women, older adults, those unemployed, living in poverty, living in rural environments, and adults with public health insurance. The COVID-19 pandemic has heavily played into the biopsychosocial model of pain. Consequently, greater impacts have affected patients with mood disorders, opioid abuse, and chronic pain. Concurrently, telemedicine has become a popular vehicle during the COVID-19 pandemic in continuing to provide quality patient care. The purpose of this article is to review the benefits and challenges related to the delivery of telemedicine for patients with chronic pain.

Recent Findings The benefits of telemedicine have been examined from patient psychosocial and convenience factors as well in relation to medical practice efficiency. Within chronic pain management, one of telemedicine's most effective utilization is seen via post-injection follow-up and assessment of further necessary interventions. Challenges also exist in this framework, from lack of physical examination and convenient close therapeutic monitoring and drug screening, to technological and resource cost capabilities of older and disadvantaged chronic pain patients, to barriers in establishing patient-provider rapport. During the COVID-19 pandemic, telehealth services were covered at rates comparable to in-person visits. Health insurance coverage and payment were major barriers for implementation of telemedicine prior to the pandemic. It is difficult to predict ongoing coverage and payment of telehealth services, although the benefits in terms of access and patient satisfaction have clearly been demonstrated.

Summary While telemedicine has proven to be a very useful tool with a wealth of advantages, the delivery of virtual health-care for chronic pain poses a set of challenges that will need to be met to ensure the quality and standard of care continue to be upheld.

Keywords Telemedicine · Chronic pain · Pain medicine · Interventional pain medicine

Introduction

The COVID-19 pandemic impacted and significantly changed the way healthcare has been delivered over the last 2 years. The use of virtual care/telehealth has increased appreciably. Recent studies have shown a 38-fold increase (currently stabilizing at about 13–17% of healthcare visits currently) for virtual healthcare visits compared to pre-pandemic levels.

Rates have also increased with chronic pain management. Maintaining quality of care has been a main point of focus for pain practitioners as they seek to continue to maintain relationships, access, and safe delivery of care for their patients in pain [1, 2].

Chronic pain affects approximately 20.4% (50 million) of the adult population in the USA. High-impact chronic pain further affected 8.0% of US adults, which is defined as chronic pain that limited life or work activities on most days or every day during the past 6 months [3, 4]. Chronic pain contributes to an estimated \$560 billion each year in direct medical costs, lost productivity, and disability programs [5]. Additionally, pain is one of the most common reasons to seek medical care [6]. It has been linked to restrictions in mobility and daily activities, dependence on opioids, anxiety, depression, and poor perceived health or reduced quality of life [7]. Similarly, one study with new opioid pain patients

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demonstrated that 49% of patients taking opioids continued to report severe pain ($\geq 7/10$). In the study's multivariate analysis, factors associated with having higher levels of pain included higher fibromyalgia survey scores, more neuropathic pain symptoms, and higher levels of depression. While only 3.2% were given a primary diagnosis of fibromyalgia by their physician, 40.8% met American College of Rheumatology survey criteria for fibromyalgia [8].

There is mounting evidence that the individual, societal, and healthcare pressures imposed by the COVID-19 pandemic have exacerbated the burden of chronic pain and created more difficulty for individuals to manage their pain [9]. Furthermore, the pandemic has heavily played into the biopsychosocial model's influence on pain [10]. Research has demonstrated that pain catastrophizing and the experiences of chronic pain have increased during the pandemic. This has been seen with increases in social isolation, disconnectedness, heightened emotional distress, physical activity restrictions, and healthcare uncertainty [11–15]. The overall worsening of the underlying pain condition has resulted in an increased adoption of less effective pain management strategies, such as increased medication usage and excessive rest [16]. Unfortunately, there have also been increases in mortality related to alcohol, opioids, and illicit drugs during the pandemic [17, 18].

Benefits of Telemedicine

The emergence of telemedicine has shifted the paradigm for care across various disciplines. One aspect that is commonly demonstrated across specialties is the importance of maintaining the quality of interactions between patients and providers, via remote mediums. Chronic pain medicine is no exception. With the Centers for Medicare and Medicaid Services (CMS) influencing continued reimbursement rates, incentives for opportune uses of telemedicine should remain [19].

The benefits of telemedicine have previously been examined in various studies, from physical therapy intervention in low back pain to efficacy of telemedicine for psychological therapy in pediatric and adolescent pain management [20, 21]. Within telemedicine, various chronic pain cost analysis studies have been investigated; however, there is a lack of standardized approach within assessments and treatments through this medium [22]. As the pandemic begins to improve, routine medical care will resume for most patients. Providers should remain flexible with healthcare delivery that evolved during the pandemic, especially in relation to telemedicine. Thus, it is important to examine the benefits of telemedicine.

First, psychosocial and patient convenience factors can be ascertained as video visits can allow for observation of patient's in their home environment. The provider may be able to indirectly assess mental status, interpersonal relationships with

interactions with family and others in the household, and at-home behaviors that demonstrate recreational activities [23••].

Another aspect is the convenience factor for patients and providers as no travel is needed. This allows for more access to patients who live in rural areas far away from clinics, and no additional costs for parking or child care. This overall provides less burden for patients. In addition, specifically within the period of the COVID-19 pandemic, telemedicine has allowed for minimization of infectious exposures. In addition, research has shown that lower no-show rates are seen for patients with telemedicine visits [24].

Efficiency is another factor that is influenced by the telemedicine structure. Within clinics, time management is directly affected by rooming and discharging patients, aspects that are better managed virtually. Nursing teams are still able to perform medicine reconciliation with patients and other tasks that otherwise fall on the provider; however, it remains unclear how facility reimbursement will continue in the future [25].

One of the most effective modalities of pain management is the use of interventional techniques, in the form of diagnostic and therapeutic injections. Post-injection communication is crucial and particularly critical after a multitude of blocks, including diagnostic injections, sympathetic blocks, and neurolytic blocks. A patient's response to the injection may often dictate the next step in the algorithm and care. Assessment includes determination of persistence of severity of the symptoms, attenuation of symptoms, or alleviation of symptoms by a certain percentage from pre-injection levels. This assessment will determine if therapeutic injections are indicated, if a repeat block is indicated, or if further steps are needed to give pain relief. Some payers now require a provider visit to document these findings [26, 27]. A virtual appointment with a patient after a procedure is a viable option to make this assessment. Because the patient has been properly informed prior to the procedure about the possible response(s), for example, temporary relief expected after a diagnostic block, and pre-procedure VAS scores recorded, the response to the block can be determined and discussed via a telehealth visit. A virtual follow-up allows for an accurate and practical update from the patient's home with ease, efficiency, and convenience. This also allows the physician to review the next steps with the patient, discuss any pre-procedure instructions, and appropriately schedule the patient for a procedure. The pandemic has upended many parts of healthcare but the transition and use of telemedicine/virtual care in this aspect of pain medicine can be beneficial and successful.

Challenges of Telemedicine

The expansion of telemedicine has changed the way patients access healthcare across all specialties. The COVID-19 pandemic has fueled this trend, with telemedicine platform use

dramatically increased. As the world continues to adapt and recover from the pandemic, telemedicine appears to be here to stay, as its popularity is shared among patients and physicians alike [28]. However, with the benefits, telemedicine also brings new challenges to patient care. Although many of these challenges are shared across all medical specialties, the delivery of telemedicine for chronic pain has a unique set of potential barriers that must be considered [29••].

One of the most significant difficulties with virtual patient care is lack of physical examination. The physical exam is often an integral part of patient evaluation, enabling the physician to establish a set of potential diagnoses, while ruling out others. The importance of the physical exam in pain medicine is seen through patient observation and diagnostic maneuvers. Both are heavily relied upon for diagnosis and treatment planning. This is especially true for new patients in whom a diagnosis has not been established or where it may be necessary to document symptom improvement or undesirable post-procedural neurologic changes [23••, 30].

Research has shown that virtual exams can be used as a substitute in select cases. In some cases, the practitioner can perform anatomic inspection to identify normal versus pathological presentations with proper utilization of electronic devices by the patient and physician [31••]. In fact, guidelines have been recommended to aid in performing an effective medical exam via telemedicine [30]. Although many aspects of a patient's condition and symptomatology can be ascertained through a virtual exam, in the more debilitated patient, independent tasks can prove to be more difficult. These barriers include exposing a post-procedural incision, performing basic motor tasks, and positioning the camera in a way that provides the most information to the clinician. In addition, without appropriate lighting, camera positioning, and the spatial ability to adjust the camera as needed to perform a virtual exam, the quality of a telemedicine visit can be impacted substantially [32]. In particular, patients with chronic pain conditions may have limited mobility that may require the assistance of the examining provider in performing many functions.

Telemedicine visits have served as a buffer during the global pandemic to avoid risk of COVID-19 exposure to patients and healthcare staff [33•]. However, some chronic pain patients may require an in-person visit at certain intervals. Current guidelines recommend at least quarterly follow-up visits for patients using controlled substances to monitor the need for continued therapy, dosage, and prescription drug history. Additionally, routine urine drug screen evaluation is currently recommended at least every 6–12 months. The traditional practice has been to obtain a specimen during an office visit to ensure validity, thereby making virtual evaluation impossible [34]. Patients undergoing certain interventional procedures may also require an in-person visit to obtain insurance pre-authorization for initial procedures and for follow-up procedures.

The patient-provider relationship is instrumental to providing quality care to the chronic pain patient. Research has shown there are potential barriers to preserving this relationship that are unique to telemedicine. This includes the absence of nonverbal cues that inhibit the discussion of sensitive issues, the introduction of bias by observing the patient within their home environment, privacy concerns if the patient lives with others or if requires assistance with virtual visits, distractions in the home, and poor connectivity/difficulty using smart phone or other device to access telemedicine visit [23••].

One goal of continued expansion of telemedicine is to provide increased access to persons of low socioeconomic status (SES), those with disabilities/difficulty with travel, and patients who reside in locations without specialty consultants (i.e., rural/nonurban areas) [30, 35, 36]. According to a survey in 2018, 54% of rural residents reported difficulty with internet connectivity and 22% reported no internet use [37]. In addition, rural communities face lower access to healthcare, health services, and health insurance compared with urban settings, further widening the gap in health disparities [38]. While potentially less burdensome than the cost of in-person visits, telemedicine is not without its own cost. For instance, a wireless internet or cellular data plan is required for video-based telemedicine visits. These plans can vary in cost with connectivity speeds, and even the recommended minimum (10 megabytes per second for a video telemedicine visit) can be insufficient if there are other individuals in the home [30]. Further exacerbating this problem, populations in rural areas and those of low SES often have limited availability of fixed terrestrial broadband access (cable) and thus are reliant on more expensive mobile data plans and satellite broadband access. Both are significantly costlier than cable access [39, 40].

In addition to wireless/cellular data and device access, patients must have the necessary degree of “digital literacy” to engage effectively with the virtual visit [32]. A recent review of telemedicine use by Ikram and colleagues noted significant patient difficulty with directing the camera. Almost half of the patients they identified as having video-capable telemedicine devices did not know how to perform these functions on their devices. It was also noted that higher rates of miscommunication and misdiagnosis occurred with patients with disabilities (e.g., hearing impairment, dementia, and blindness) during telemedicine appointments [32]. As approximately 30% of people suffering from chronic pain are over 65 years old, a lack of digital literacy in this age group can truly decrease the quality of care. Other patient factors resulting in inability to complete a tele-video appointment or necessitating a telephone only visit include non-Hispanic Black race and the utilization of Medicare or Medicaid health insurance [41•, 42].

The impact of virtual healthcare on the medicolegal system is still unknown. Since an in-person physical exam has been an integral part of medical evaluation, it remains to be seen exactly what role this has on the standard of care for telemedicine. Some states have created policies regarding the standard of care. Virginia and Florida, for instance, have explicitly stated that the standard of care does not change based on whether the services are delivered in person or via telemedicine [43, 44]. Undoubtedly as telemedicine becomes more integral to the healthcare delivery process, we will see specific medicolegal guidelines and restrictions to this platform.

The Health Insurance Portability and Accountability Act (HIPAA) also has implications on the telemedicine platform. Patients who require assistance using their smartphone or other telemedicine device may experience privacy violations simply because they are not able to use their device independently. Additionally, not all video conferencing services are HIPAA compliant, but have been allowed during the global pandemic [45].

With the expanding influence of technology on healthcare delivery models, several societies including the American Medical Association (AMA) have sought to find solutions to the delivery of healthcare via telemedicine. In 2015, AMA sponsored a CPT Telehealth workgroup aimed at coding for telehealth services. From this workgroup, a new coding modifier (-95) emerged and was approved for “Synchronous Telemedicine Service Rendered Via a Real-Time Interactive Audio and Video Telecommunications System” in 2017 [46]. Although coding now existed for several of these services at that time, it was recognized that payment and coverage were still restricted in many circumstances. The AMA subsequently sponsored a digital payment advisory group (DPAG) with focus on integration of coding, coverage, and payment. Prior to the pandemic, there was progress being made in this realm. However, the COVID-19 pandemic in 2020 resulted in declaration of a public health emergency and telehealth services were covered at rates comparable to in-person visits. At the time of this publication, it is difficult to predict ongoing coverage and payment of telehealth services, although the benefits in terms of access and patient satisfaction have clearly been demonstrated.

Conclusion

The use of telemedicine for chronic pain will likely continue to expand. However, telemedicine is still in its infancy, with its use accelerated during the global pandemic. While it is a very useful tool with a wealth of advantages, the delivery of virtual healthcare for chronic pain poses a set of challenges that will need to be met to ensure the quality and standard of care continue to be upheld.

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Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

Research Involving Human and Animals Participants This article does not contain any studies with human or animal subjects performed by any of the authors.

References

Papers of particular interest, published recently, have been highlighted as:

- Of importance
- Of major importance

1. Bestsenny O, et al. Telehealth: a quarter-trillion-dollar post-COVID-19 reality? McKinsey & Company, 28 Feb. 2022, <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality>.
2. New HHS study shows 63-fold increase in Medicare telehealth utilization during the pandemic. HHS.gov, 3 Dec. 2021, <https://www.hhs.gov/about/news/2021/12/03/new-hhs-study-shows-63-fold-increase-in-medicare-telehealth-utilization-during-pandemic.html>.
3. Dahlhamer J, Lucas J, Zelaya C, et al. Prevalence of chronic pain and high-impact chronic pain among adults — United States, 2016. *MMWR Morb Mortal Wkly Rep*. 2018;67:1001–6.
4. National pain strategy: a comprehensive population health-level strategy for pain. National Institutes of Health. https://www.iprcc.nih.gov/sites/default/files/documents/NationalPainStrategy_508C.pdf.
5. Schappert SM, Burt CW. Ambulatory care visits to physician offices, hospital outpatient departments, and emergency departments: United States, 2001–02. *Vital Health Stat*. 2006;13(13):1–66.
6. Gureje O, Von Korff M, Simon GE, Gater R. Persistent pain and well-being. A World Health Organization study in primary care. *JAMA*. 1998;280:147–51.
7. Wasserman RA, Brummett CM, Goesling J, Tsodikov A, Hassett AL. Characteristics of chronic pain patients who take opioids and persistently report high pain intensity. *Reg Anesth Pain Med*. 2014;39(1):13–7.
8. Emerick T, Alter B, Jarquin S, et al. Telemedicine for chronic pain in the COVID-19 era and beyond [published correction appears in *Pain Med*. 2021 Sep 8;22(9):2142]. *Pain Med*. 2020;21(9):1743–1748.
9. Caffery LJ, Farjian M, Smith AC. Telehealth interventions for reducing waiting lists and waiting times for specialist outpatient services: a scoping review. *J Telemed Telecare*. 2016;22(8):504–12.
10. Consonni M, Telesca A, Grazzi L, et al. Life with chronic pain during COVID-19 lockdown: the case of patients with small fibre neuropathy and chronic migraine. *Neurol Sci*. 2021;42:389–97.

11. Carrillo-de-la-Peña MT, González-Villar A, Triñanes Y. Effects of the COVID-19 pandemic on chronic pain in Spain: a scoping review. *Pain Rep.* 2021;6:e899.
12. Dassieu L, Pag MG, Lacasse A, et al. Chronic pain experience and health inequities during the COVID-19 pandemic in Canada: qualitative findings from the chronic pain & COVID-19 Pan-Canadian study. *Int J Equity Health.* 2021;20:147.
13. Pag MG, Lacasse A, Dassieu L, et al. A cross-sectional study of pain status and psychological distress among individuals living with chronic pain: the Chronic Pain & COVID-19 Pan-Canadian Study. *Health Promot Chronic Dis Prev Can.* 2021;41:141–52.
14. Yu L, Kioskli K, McCracken LM. The psychological functioning in the COVID-19 pandemic and its association with psychological flexibility and broader functioning in people with chronic pain. *J Pain.* 2021;22:926–39.
15. Lacasse A, Pag MG, Dassieu L, et al. Impact of the COVID-19 pandemic on the pharmacological, physical, and psychological treatments of pain: findings from the Chronic Pain & COVID-19 Pan-Canadian Study. *Pain Rep.* 2021;6: e891.
16. Nieto R, Pardo R, Sora B, et al. Impact of COVID-19 lockdown measures on Spanish people with chronic pain: an online study survey. *J Clin Med* 2020;9.
17. White AM, Castle IP, Powell PA, Hingson RW, Koob GF. Alcohol-related deaths during the COVID-19 pandemic. *JAMA.* Published online March 18, 2022. <https://doi.org/10.1001/jama.2022.4308>
18. Overdose death rates. National institute on drug abuse. Accessed 15 Feb 2022. <https://nida.nih.gov/drug-topics/trends-statistics/overdose-death-rates>
19. Centers for Medicare and Medicaid Services. Medicare telemedicine health care provider fact sheet. 2020.
20. Amorim A, Pappas E, Simic M, et al. Integrating mobile-health, health coaching, and physical activity to reduce the burden of chronic low back pain trial (IMPACT): a pilot randomized controlled trial. *BMC Musculoskelet Disord.* 2019;20(1):71.
21. Fisher E, Law E, Dudeney J, Eccleston C, Palermo T. Psychological therapies (remotely delivered) for the management of chronic and recurrent pain in children and adolescents. *Cochrane Database Syst Rev.* 2019;4:CD011118.
22. Pronovost A, Peng P, Kern R. Telemedicine in the management of chronic pain: a cost analysis study. *Can J Anaesth.* 2009;56(8):590–6. <https://doi.org/10.1007/s12630-009-9123-9>. Epub 2009 May 30 PMID: 19484320.
23. ● Emerick T, Alter B, Jarquin S, Brancolini S, Bernstein C, Luong K, et al. Telemedicine for chronic pain in the COVID-19 era and beyond. *Pain Med.* 2020;21(9):1743–8. <https://doi.org/10.1093/pm/pnaa220>. **A commentary providing early guidance on how and when to use telemedicine for chronic pain providers.**
24. Drerup B, Espenschied J, Wiedemer J, Hamilton L. Telemedicine and e-health. *Dec* 2021;1409–1415.
25. Jen SP, Bui A, Leonard SD. Maximizing efficiency of telemedicine in the skilled nursing facility during the coronavirus disease 2019 pandemic. *J Am Med Dir Assoc.* 2021;22(6):1146–1148. e2. <https://doi.org/10.1016/j.jamda.2021.04.009>.
26. United States, Congress, Department of Health and Human Services. Epidural steroid injections for pain management, Centers for Medicare and Medicaid Services, 12 Dec. 2021. <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=36920>. Accessed 26 Feb. 2022.
27. United States, Congress, Department of Health and Human Services. Facet joint interventions for pain management, Centers for Medicare and Medicaid Services, 2 Feb. 2022. <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=38803>. Accessed 26 Feb. 2022.
28. Vorenkamp KE. Improving pain care through telemedicine: future or folly? *Pain Med.* 2016;17(6):997–8. <https://doi.org/10.1093/pm/pnw035>.
29. ● Tauben DJ, Langford DJ, Sturgeon JA, Rundell SD, Towle C, Bockman C, et al. Optimizing telehealth pain care after COVID-19. *Pain.* 2020;161(11):2437–45. **This review article considers the value case for telehealth-based multidisciplinary pain management approaches, reviews available evidence, delineates obstacles, and proposes solutions across multiple domains.**
30. Perez J, Niburski K, Stoopler M, Ingelmo P. Telehealth and chronic pain management from rapid adaptation to long-term implementation in pain medicine: a narrative review. *Pain Rep.* 2021;6(1): e912.
31. ● Wahezi SE, Duarte RA, Yerra S, Thomas MA, Pujar B, Sehgal N, et al. Telemedicine during COVID-19 and beyond: a practical guide and best practices multidisciplinary approach for the orthopedic and neurologic pain physical examination. *Pain Physician.* 2020;23(4S):S205–38. **This article provides a comprehensive description of how to perform 69 different physical examination maneuvers via telehealth in the home setting, convened by a multispecialty group of physicians.**
32. Ikram U, Gallani S, Figueroa JF, Feeley TW. 4 strategies to make telehealth work for elderly patients. 2020. <https://hbr.org/2020/11/4-strategies-to-make-telehealth-work-for-elderly-patients>. Accessed 28 Feb 2022.
33. ● Eccleston C, Blyth FM, Dear BF, Fisher EA, Keefe FJ, Lynch ME, et al. Managing patients with chronic pain during the COVID-19 outbreak: considerations for the rapid introduction of remotely supported (eHealth) pain management services. *Pain.* 2020;161(5):889–93. **This article reviews factors related to treating chronic pain patients during the pandemic with guidance to pain practitioners in transitioning into telemedicine care.**
34. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain - United States, 2016. *MMWR Recomm Rep.* 2016;65(1):1–49.
35. Theodore BR, Whittington J, Towle C, Tauben DJ, Endicott-Popovsky B, Cahana A, et al. Transaction cost analysis of in-clinic versus telehealth consultations for chronic pain: preliminary evidence for rapid and affordable access to interdisciplinary collaborative consultation. *Pain Med.* 2015;16(6):1045–56.
36. Glynn LH, Chen JA, Dawson TC, Gelman H, Zeliadt SB. Bringing chronic-pain care to rural veterans: a telehealth pilot program description. *Psychol Serv.* 2021;18(3):310–8.
37. Wilmoth D. Accessing the internet in rural America (Issue Brief No. 15). U.S. Small Business Administration, Office of Advocacy; 2019.
38. Hirko KA, Kerver JM, Ford S, Szafranski C, Beckett J, Kitchen C, et al. Telehealth in response to the COVID-19 pandemic: implications for rural health disparities. *J Am Med Inform Assoc.* 2020;27(11):1816–8.
39. Holmes A, Fox E, Wieder B, Zubak-Skees C. Rich people have access to high-speed internet; many poor people still don't. 2016. <https://publicintegrity.org/inequality-poverty-opportunity/rich-people-have-access-to-high-speed-internet-many-poor-people-still-dont/>. Accessed 28 Feb 2022.
40. Anderson M. About a quarter of rural Americans say access to high-speed internet is a major problem. 2018. <https://www.pewresearch.org/fact-tank/2018/09/10/about-a-quarter-of-rural-americans-say-access-to-high-speed-internet-is-a-major-problem/>. Accessed 28 Feb 2022.
41. ● Wegermann K, Wilder JM, Parish A, Niedzwiecki D, Gellad ZF, Muir AJ, et al. Racial and socioeconomic disparities in utilization of telehealth in patients with liver disease during COVID-19. *Dig Dis Sci.* 2022;67(1):93–9. <https://doi.org/10.1007/s10620-021-06842-5>. **This study identifies disparities in race or socioeconomic status among patients utilizing telehealth visits during COVID-19.**

42. Zelaya CE, Dahlhamer JM, Lucas JW, Connor EM. Chronic pain and high-impact chronic pain among US adults, 2019. NCHS Data Brief. 2020;390:1–8.
43. Telemedicine (Guidance Document: 85–12). Virginia Board of Medicine; 2021.
44. Use of telehealth to provide services, Fla. Stat. § 456.47. 2019.
45. Notification of enforcement discretion for telehealth remote communications during the COVID-19 nationwide public health emergency. 2021. <https://www.hhs.gov/hipaa/for-professionals/special-topics/emergency-preparedness/notification-enforcement-discretion-telehealth/index.html>. Accessed 28 Feb 2022.
46. CPT Professional 2022. American Medical Association; 2022.

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