Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Telehealth Benefits and Barriers

Shilpa N. Gajarawala, Jessica N. Pelkowski

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A B S T R A C T

Telehealth includes health care services provided using audio and video technology. Telehealth was originally developed to provide basic care to rural and underserved patients. Higher rates of use of telehealth are now standard in many practices since the coronavirus disease 2019 pandemic. Increasing emphases on patient satisfaction, providing efficient and quality care, and minimizing costs have also led to higher telehealth implementation. Patients and providers have enjoyed the benefits of telehealth, but widespread adoption has been hindered by regulatory, legal, and reimbursement barriers. Recent legislative initiatives have advocated for further telehealth advancements, especially with the rapid implementation of telehealth in the times of coronavirus disease 2019.

The terms *telehealth* and *telemedicine* are often used interchangeably. Telehealth is a subset of e-health and is the use of telecommunications technology in health care delivery, information, and education according to the Health Resources and Services Administration.[1,2] Telemedicine is considered to be under the umbrella of telehealth and refers specifically to clinical services. Telehealth and telemedicine cover similar services, including medical education, remote patient monitoring, patient consultation via videoconferencing, wireless health applications, and transmission of imaging and medical reports.[1,2] Improvements in health care information technology, in addition to the expansion of access to health care services, have stimulated telehealth growth, uniting providers and patients in methods that were unimagined in the past.[2,3] Telehealth includes a wide range of practices and specialties and involves interactions among patients and providers through telephone, e-mail, video chats or conferences, the Internet, and remote devices.[2,3] The rapid expansion of telehealth, especially during the coronavirus disease 2019 (COVID-19) pandemic, paired with variable regulations and guidelines creates increased potential for liability and legal issues.[2]

The original concept of telehealth was providing basic care to rural and underserved patients.[1,4] Wider acceptance and incorporation of telehealth can be attributed to several factors. One of these factors is the transition of health care from fee-for-service models to models in which reimbursement is linked to patient and quality outcomes. With increasing emphasis and pressure for hospitals and providers to provide quality patient care and cut costs, telehealth has found acceptance and success in multiple medical specialties and settings.[3]

Increasingly, telehealth technologies are being adopted and implemented as an efficient and cost-effective means for delivering and accessing quality health care services and outcomes.[1] Telemedicine has the potential to reduce American health care spending by decreasing problems like medication misuse, unnecessary emergency department visits, and prolonged hospitalizations.[1,3] Telehealth provides access to resources and care for patients in rural areas or areas with provider shortages, improves efficiency without higher net costs, reduces patient travel and wait times, and allows for comparable or improved quality of care.[1,3] Better access to care, convenience, and reduced stress with telehealth use also can increase patient satisfaction.[3] Although patients and providers enjoyed the benefits of telehealth, the widespread adoption of telehealth has unfortunately been hampered by a variety of barriers including technology use among older adults and Internet bandwidth speeds in rural or underserved areas. Despite these barriers, telehealth acceptance will likely continue to increase as patients and providers become more adept at and comfortable with using technology instead of face-to-face interactions.[3]

The COVID-19 pandemic resulted in many challenges for the health care system as a whole. In order to continue to care for patients with and without COVID-19 safely and effectively, many changes in practice models were necessary. This resulted in a rapid shift to telehealth models in many settings in both inpatient and outpatient arenas. In order to prevent and reduce the transmission of COVID-19, patients and providers had to quickly adapt to telehealth models.

Telehealth Barriers

Some disadvantages of telehealth include limitations with performing comprehensive physical examinations, possibilities for technical difficulties, security breaches, and regulatory barriers.[2]

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Some critics to telehealth use worry that telehealth may adversely affect continuity of care, arguing that online interactions are impersonal and dangerous in that the virtual provider does not have the benefit of a complete history and physical examination to aid with diagnosis and treatment.[2,5] Although face-to-face encounters are necessary in many circumstances in which auscultation or palpation is necessary, telehealth should be considered as an adjunct and best used to supplement in-person visits.[2,5]

Telehealth also faces many legal and regulatory hurdles including large variations in rules, regulations, and guidelines for practice. This variability contributes to the confusion for providers engaged in the practice of telehealth. Health care providers should keep risk management strategies in mind and familiarize themselves with potential telehealth legal risks and implications.[2] This will ensure best practices for patient care and to avoid licensure or litigation issues.[2] Telehealth rules and regulations vary greatly by state and are constantly emerging and evolving. This creates unclear understandings regarding standards and guidelines among health care organizations and groups.[2] The rapid expansion of telehealth, especially during the COVID-19 pandemic, paired with variable regulations and guidelines creates increased potential for liability and legal issues. Providers should have awareness of and maintain compliance with state and federal legal requirements while using best practice guidelines to provide patient safety.[2]

Lack of Multistate Telehealth Licensure

Telehealth practitioners can provide medical services across geographic borders, sharing clinical expertise with patients and other health care providers. The lack of multistate licensure presents a barrier to telehealth because providers must obtain and uphold licensure (and the associated medical education and financial obligations) in multiple states.[6] The Federation of State Medical Boards created the Interstate Medical Licensure Compact to ease portability of licensure and the practice of telemedicine from state to state for physicians and physician assistants.[6] Under the compact, state medical boards would maintain licensure and disciplinary authority of providers.[6] However, they would share information and processes essential to these providers' licensure and regulations.[6] This compact does not apply to nurse practitioners (NPs) because they are licensed under state boards of nursing and not medicine. Because state regulation and practice authority varies from state to state, NPs face more barriers than physicians or physician assistants. It is important to note that some requirements have temporarily changed because of COVID-19 in certain areas. NPs should check with their state board of nursing for the most accurate and up-to-date regulations regarding telehealth practice.

Patient Privacy and Confidentiality

Compared with face-to-face encounters, telemedicine encounters are more vulnerable to privacy and security risks.[3] Most telehealth platforms are highly encrypted and in accordance with Health Insurance Portability and Accountability Act standards and regulations, but no platform is 100% safe from hackers or data breaches. Another barrier to wider acceptance and implementation of telehealth is the concern about the privacy and security of telehealth systems. Both providers and patients should trust that the transmission of information during telehealth encounters remains private and secure.[6] Several laws, including the Health Insurance Portability and Accountability Act, the Health Information Technology for Economic and Clinical Health, and the Children's Online Privacy Protection Act protect medical information for both face-to-face and telehealth encounters.[2,7] These laws offer privacy, security, and protection for health information that is collected by covered entities such as health care plans, health care clearinghouses, and health care providers who use electronic resources for the transmission of health care information.[6,7] Knowledge of both state and federal laws is vital to practicing telehealth. Telehealth providers must take responsibility for ensuring compliance with regulations, patient confidentiality, and system security at all times when practicing in a telehealth model.

In addition to knowledge of legal aspects of telehealth, it is important for providers to be aware of and practice telehealth etiquette. These etiquette standards should be observed when providers are working remotely at home or performing telehealth visits at their practice location.

Data Accuracy and Misdiagnosis

Another potential barrier to effective telehealth practice is the accuracy of data transmission. A study investigating the accuracy of physical function measurements revealed that Internet bandwidth affects the validity and reliability for fine motor task measurements.[6] This can result in health care practitioners making clinical treatment decisions and recommendations based on potentially inaccurate patient data if they are ignorant of differences in technological systems.[6]

Fortunately, data accuracy is regulated by the Digital Imaging and Communications in Medicine format, which is an international gold standard for medical images and associated information.[6] This provides clear standards for the acceptable format quality for medical images and data required for clinical use and the associated interpretations.[6]

Provider-Patient Relationships

States have various criteria for establishing provider-patient relationships, which can include examinations or evaluations of a patient by a health care provider. It is particularly imperative to understand the criteria for establishing a provider-patient relationship before any prescribing of medications is done. For example, Arkansas requires a face-to-face episode of care before a physician can prescribe medications.[5] Other states such as Missouri do not use the terms *in-person* or *face-to-face* but require a physical examination or evaluation.[5] Other states such as Virginia and Maryland allow physical examinations or evaluations by use of electronic technology such as telehealth.[5]

In 2015, the Supreme Court of Iowa unanimously struck down a restriction that would have prevented physicians from administering medication-induced abortions remotely through the use of telehealth. After this decision was made, the American College of Obstetricians and Gynecologists, which supports the practice of medication-induced abortion via telemedicine access, expressed concerns. They stated that a ban on telemedicine-facilitated medication-induced abortions would create burdens for rural women seeking this procedure.[8] The Iowa Supreme Court ruled that the restriction would have placed burdens on women's rights. The implications of this ruling for all providers of telemedicine (including primary care clinicians and obstetrician–gynecologists) was crucially important.[5] The court's decision had implications for telemedicine beyond the ramifications on abortion access. It also limits state boards of medicine's roles regarding restrictions of controversial medical services provided through telehealth.[5]

Medical Liability

The practice of telehealth raises many questions regarding malpractice liability including informed consent, practice

standards and protocols, supervision requirements for nonphysician providers, and the provision of professional liability insurance coverage. Simply applying existing principles of malpractice liability to telehealth is not straightforward, especially when it is unclear what an appropriate "standard of care" is.[5] Professional liability policies may not include telehealth in the scope of coverage. Special attention should be given to prevent errors and omissions, negligent credentialing, breaches of privacy, and interruptions of service during equipment or technology failures.[2] Providers need to be cognizant of what exactly liability insurance policies cover, especially when providing telehealth services in other states.[2]

Fraud and Abuse

As telehealth use grows, caution and care should be taken to ensure that the practice of telehealth does not violate federal antikickback and Stark Law statues.[2] These laws prohibit providers from receiving compensation for accepting or making referrals to other facilities or providers where the referring provider has financial interests.[2] Violations to these laws can result in fines, prison time, and/or exclusion from the Medicare and/or Medicaid programs.[2] The Federal Physician Self-Referral Law, also referred to as the Stark Law, prohibits a health care provider (or an immediate family member of a provider) from referring Medicare patients to entities providing designated health services if that provider or the provider's immediate family member has a financial interest.[2] When considering potential fraud and abuse scenarios and related risks, a provider needs to keep in mind that each state has its own variations of these laws. A state-by-state analysis is necessary because of variations in statutes and/or regulations.

Prescribing of Controlled Substances

As telehealth expands, 1 area of interest and potential liability involves the prescribing of controlled substances. This particularly affects medical and surgical specialties that use pharmacotherapy for chronic disease management. Telemedicine prescribing laws and rules must be acknowledged when establishing service lines and strategies that meet patient needs and satisfy the many layers and levels of interconnected state and federal laws on telehealth, medical practice, controlled substance prescribing, fraud, and/or abuse.[9]

The Ryan Haight Online Pharmacy Consumer Protection Act took effect in 2009 and was enacted to oppose the Internet pharmacies that prospered from the sale of controlled substances online.[10] The act imposed a federal regulation that prohibited online form-only prescribing of controlled substances and mandated that controlled substances may not be distributed, delivered, or dispensed by way of the Internet without a valid prescription.[10] The definition of a valid prescription is one provided for a legitimate medical purpose by a health care provider who has performed at least 1 face-to-face evaluation of the patient.[10] Once an in-person medical evaluation has been completed by the prescribing practitioner, the Ryan Haight Act does not establish an expiration date or outline mandatory requirements of subsequent re-examinations.[9-11]

It is important to note that the Ryan Haight Act does not prohibit the prescribing of controlled substances via telehealth as long as federal and state requirements are met.[10] However, it was perceived as restrictive by the American Telemedicine Association.[10] In 2016, the Drug Enforcement Agency announced an initiative to issue a new rule to initiate a registration process that would allow the prescribing practitioner to use telehealth technology to prescribe controlled substances without a face-to-face examination.[9] Providers need to consider the penalties for infractions and not assume their approach to virtual care meets a "practice of telehealth" exception under the Ryan Haight Act.[10]

Reimbursement

A substantial obstacle to the widespread adoption and use of telehealth is the lack of significant reimbursement from Medicare, several state Medicaid programs, and commercial insurance plans. Unlike with Medicare, Medicaid programs are under state control and subject to telehealth state laws. Medicaid reimbursement of telehealth services are widely dependent on individual state policies. Medicaid coverage of real-time video transmission, forwarding of prerecorded video transmission, and remote monitoring or patients varies by states.[7]

In 2018, the Bipartisan Budget Act was approved by Congress and signed into law by the President. This act enacts major changes for Medicare telehealth policy by assimilating policies from the Senate's Creating High-Quality Results and Outcomes Necessary to Improve Chronic (CHRONIC) Care Act.[12] Changes in the policies in this act represent significant legislative advances for Medicare's telehealth policy.[12]

Telehealth coverage improvements were made in addition to the Centers of Medicare and Medicaid's decision to include the coverage of remote patient monitoring for millions of patients with chronic health conditions on Medicare.[12] This offers potential to expand access and improve quality of care for Medicare beneficiaries not only for those with chronic conditions but also for those whose morbidity and mortality could be reduced by early interventions such as patients with heart disease or stroke.[12]

Conclusion

Telehealth was once limited only to rural or remote communities but is now increasingly used to expand the geographic reach of health care services and improve access to care. Factors such as convenience, efficiency, communication, privacy, and comfort have been identified by patients as important to use telehealth.[11] Telehealth includes a wide range of practices and specialties and involves interactions among patients and providers through telephone, e-mail, video chats or conferences, the Internet, and remote devices.[2,3] Patients equipped with smartphones, tablets, laptop computers, and desktop computers can readily use telehealth applications to link them with health care practitioners who can potentially diagnose, monitor, and treat a multitude of acute and chronic conditions.[13,14] Along with such technological advances, approval and acceptance are increasing because telehealth is an efficient and effective tool for improving health care access and outcomes, yet several barriers to telehealth practice remain to be overcome.

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Shilpa N. Gajarawala, DMSc, PA-C, is a physician assistant at the Department of Gynecological Surgery, Mayo Clinic in Jacksonville, FL. Jessica N. Pelkowski, DNP, AGPCNP-BC, is a nurse practitioner at the Department of Orthopedic Surgery, Mayo Clinic in Jacksonville, FL, and can be contacted at Pelkowski.Jessica@mayo.edu.

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