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.

CHEST

Providing Outpatient Telehealth Services in the United States

Before and During Coronavirus Disease 2019

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Before coronavirus disease 2019 (COVID-19), telehealth evaluation and management (E/M) services were not widely used in the United States and often were restricted to rural areas or locations with poor access to care. Most Medicare beneficiaries could not receive telehealth services in their homes. In response to the COVID-19 pandemic, Medicare, Medicaid, and commercial insurers relaxed restrictions on both coverage and reimbursement of telehealth services. These changes, together with the need for social distancing, transformed the delivery of outpatient E/M services through an increase in telehealth use. In some cases, the transition from in-person outpatient care to telehealth occurred overnight. Billing and claim submission for telehealth services is complicated; has changed over the course of the pandemic; and varies with each insurance carrier, making telehealth adoption burdensome. Despite these challenges, telehealth is beneficial for health-care providers and patients. Without additional legislation at the federal and state levels, it is likely that telehealth use will continue to decline after the COVID-19 public health emergency. CHEST 2021; 159(4):1548-1558

KEY WORDS: COVID-19; CPT coding; evaluation and management; telehealth; telemedicine

To reduce the transmission of SARS-CoV-2, the cause of coronavirus disease 2019 (COVID-19), public health experts recommended social distancing, and many states ordered the public to stay home. Contemporaneously, federal and state authorities liberalized the use and reimbursement of telehealth services. Following social distancing guidelines, both large health-care organizations and independent medical practices retooled to deliver outpatient care remotely by using telehealth technology.[1] The technology predominantly used to replace in-person visits was real-time audio and video services. In some cases, the transition to a virtual practice occurred overnight.[2] Telehealth allowed providers and organizations to diagnose and treat COVID-19 infections in outpatients at a distance while continuing to provide uninterrupted longitudinal care to patients not directly affected by the virus.

Telehealth is broadly defined as the use of telecommunication technology to deliver health care, health education, public health, and health administration at a distance.[3,4] Current examples of telehealth clinical

ABBREVIATIONS: CMS = Centers for Medicare and Medicaid Services; COVID-19 = coronavirus disease 2019; CPT = Current Procedural Terminology; DTC = direct-to-consumer; E/M = evaluation and management; HCPCS = Healthcare Common Procedure Coding System; HHS = Health and Human Services; HIPAA = Health Insurance Portability and Accountability Act; VT = synchronous video telehealth

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TABLE 1] Descriptions of Telehealth Services

Telehealth Service	Description
Synchronous live videoconferencing	Live interactive visit between patient and health-care provider, or health-care provider and consultant, using both video and audio technology
Asynchronous (store and forward) communication	Captured and stored information transmitted to a health-care provider to aid in diagnosis or treatment
Remote monitoring (telemonitoring)	Use of medical and mobile technology to collect information such as oxygen saturation, spirometric measurements, BP, and heart rate, which is then transmitted to health-care providers
Mobile health	Use of smartphones, smartwatches, and mobile applications to track health measurements, set medication reminders, share information with health-care practitioners, and more

services, also referred to as "telemedicine,"[3,5] include synchronous, or live video and audio conferencing; asynchronous, or store and forward, communication; remote monitoring; and mobile health (Table 1).[4,6] The definitions of telehealth and telemedicine have evolved with the advent and advancement of technology.[7] A study published in 2007 identified 104 peer-reviewed definitions of telemedicine.[8]

The Centers for Medicare and Medicaid Services (CMS) defines Medicare telehealth services as health care delivered at a distance by a physician or nonphysician health-care professional using synchronous video and audio technology.[9] In addition, Medicare telehealth services include asynchronous care for beneficiaries located in Alaska or Hawaii.[9]

Medicare Regulation Before COVID-19

Federal legislation governing Medicare fee-for-service reimbursement for Medicare telehealth services restricted telehealth use and incrementally changed since 2000.[9-11] Synchronous video telehealth (VT) at home was reimbursed if the beneficiary (1) was enrolled in a next-generation accountable care organization, (2) received home hemodialysis, or (3) underwent treatment for a substance use disorder or co-occurring mental health disorder.[12,13] In the case of home hemodialysis, beneficiaries needed an in-person visit monthly for the first 3 months followed by an in-person visit every 3 months.[11,12]

Medicare telehealth services were otherwise limited to beneficiaries who lived predominantly in rural areas and traveled to a facility, known as an originating site, to receive care from a provider located at a distant site.[14] Originating sites included practitioner offices, hospitals, critical access hospitals, rural health clinics, federally qualified health centers, hospital-based or critical access hospital-based renal dialysis centers and satellites, skilled nursing facilities, and community mental health centers.[9,10,14] In addition, originating sites needed to be located in rural health professional shortage areas, counties outside of a metropolitan statistical area, or a site participating in a federal telemedicine demonstration project approved by or receiving funding from the Secretary of Health and Human Services (HHS) as of the end of 2000.[9,14] Legislation passed in 2018 expanded coverage for telehealth stroke care to include mobile stroke units.[11]

Beginning in 2019, Medicare reimbursed for communication technology-based services, which included virtual check-ins; remote evaluation of video or recorded images; and, subsequently, e-visits (Table 2).[12,15] Claims for communication technology-based services could be submitted for established patients who consented to the service. Consent was required so beneficiaries understood their responsibilities for cost sharing (ie, deductible and co-pay).[12,15] Providers in rural health clinics and federally qualified health centers used the Healthcare Common Procedure Coding System (HCPCS) code G0071 for 5 min or more of virtual communication or remote evaluation of video or images when there was an in-person visit in the previous 12 months.[12]

Beginning in 2020, CMS allowed Medicare Advantage plans to offer telehealth benefits equivalent to those offered by Medicare fee-for-service without the restrictions Medicare fee-for-service placed on telehealth use.[16] Medicare Advantage plans were able to offer VT and telephonic services without the requirement for an originating site outside of the home. However, CMS also provided Medicare Advantage plans latitude to determine which telehealth services were clinically

TABLE 2] Coding and Definitions of Medicare Communication Technology-Based Services

Name	Description	CPT[a] or HCPCS[b] Code
Virtual check-in	5 to 10 min of medical discussion between a physician, or other qualified health-care professional, and patient using synchronous audio or video technology, not originating from an E/M service within the previous 7 d or leading to an E/M service in the next 24 h or soonest appointment	G2012
Remote evaluation of prerecorded patient information	Remote evaluation of video and/or images (eg, store and forward technology) for which the provider must document interpretation and respond to sender within 24 business hours by using a telephone, video, secure text messaging, e-mail, or a patient portal: The request cannot originate from an E/M service within the prior 7 d or lead to a related E/M service in the next 24 h or soonest appointment.	G2010
e-visit	Online digital E/M service for patient-initiated digital communications (eg, patient portal) requiring a clinical decision that otherwise would have been provided in the office; code is determined according to cumulative time spent over 7 d	
	Clinician who can independently bill E/M visits of 5 to 10 min	99421
	Clinician who can independently bill E/M visits of 11 to 20 min	99422
	Clinician who can independently bill E/M visits of 21 min or more	99423
	Clinician who cannot independently bill E/M visits of 5 to 10 min	98970/ G2061
	Clinician who cannot independently bill E/M visits of 11 to 20 min	98971/ G2062
	Clinician who cannot independently bill E/M visits of 21 min or more	98972/ G2063

CPT = Current Procedural Terminology; E/M = evaluation and management; HCPCS = Healthcare Common Procedure Coding System.
[a]Developed by the American Medical Association.
[b]Developed by the Centers for Medicare and Medicaid Services.

appropriate each year, and not all Medicare Advantage plans included comparable telehealth benefits.[17]

Medicare Changes for COVID-19

In response to COVID-19, CMS allowed broader use of Medicare telehealth services (Table 3). The Secretary of HHS declared a public health emergency, and the president issued a proclamation of national emergency under the National Emergencies Act. These actions provided the Secretary of HHS broad authority to issue waivers and modifications under section 1135 of the Social Security Act affecting Medicare, Medicaid, and the Health Insurance Portability and Accountability Act (HIPAA).[18] In addition, the Coronavirus Preparedness and Response Supplemental Appropriations Act, enacted on March 6, 2020, waived Medicare restrictions and requirements for telehealth services.[19] These waivers and modifications expanded outpatient telehealth reimbursement and, thus, access to services for Medicare fee-for-service beneficiaries.

CMS announced expanded telehealth coverage on March 17, 2020, followed by two CMS interim final rules, which were applied retroactively to March 1, 2020.[20,21] The contents of both final rules applicable to outpatient telehealth are described herein, with a focus on telehealth as a substitute for evaluation and management (E/M) services. CMS noted it would continue to add telehealth services for the duration of the public health emergency.[20,21]

Synchronous Video Telehealth

Most Medicare fee-for-service beneficiaries can now receive VT at home by using applications found on mobile phones and home computers. Although many vendors provide HIPAA compliant technology for telehealth,[22] the HHS Office for Civil Rights has waived penalties for HIPAA violations to allow the provision of VT through popular applications such as Skype and Zoom.

CMS is treating E/M services delivered through VT as a replacement for in-person E/M services during the pandemic. Therefore, reimbursement for VT E/M services is equivalent to in-person visits irrespective of the patient's or practitioner's location during the visit. CMS recommends each VT service claim be submitted

TABLE 3] Medicare Telehealth Changes in Response to the COVID-19 Public Health Emergency

Name	Before COVID-19	During COVID-19
Originating site	Originating sites were composed of hospitals, clinics, health centers, skilled nursing facilities, and dialysis centers located in mostly rural areas. A home could serve as an originating site for limited beneficiaries.[a]	There are no restrictions to the locations of originating sites. The home can serve as an originating site for all beneficiaries.
Coding	The method for choosing a billing code for E/M telehealth visits was the same as billing for in-person visits.	The billing code for E/M telehealth visits is chosen based on MDM alone without the history and physical components or on total time spent on the day of the visit.
Communication technology-based services	Virtual check-ins, e-visits, and remote evaluation of video or recorded images could be used by established patients only.	Virtual check-ins, e-visits, and remote evaluation of video or recorded images can be used by all patients.
Telephonic telehealth	Audio only, telephonic telehealth was not reimbursed.	Audio only, telephonic telehealth may be reimbursed for visits up to 30 min.
Cost sharing	Medicare cost sharing (deductible and co-pay) was applicable to telehealth and communication technology-based services.	Medicare cost sharing (deductible and co-pay) for telehealth and communication technology-based services may be waived without repercussions.

COVID-19 = Coronavirus Disease 2019; E/M = evaluation and management; MDM = medical decision-making.
[a]Limited beneficiaries included those who were enrolled in a next-generation accountable care organization, who received home dialysis, or who underwent treatment for a substance use disorder or co-occurring mental health disorder.

with a place of service code; Current Procedural Terminology (CPT) code; and modifier 95, which alerts Medicare that the service being provided is through telehealth. There are also new claim submission rules for VT in rural health clinics and federally qualified health centers. Both use HCPCS G2025 after July 1. For VT before July 1, rural health clinics and federally qualified health centers use HCPCS G2025 with modifier CG or 95, respectively.[23]

The place of service code for a VT E/M claim is chosen based on the location where a practitioner typically provides care in person, irrespective of practitioner's actual location when VT is provided (Table 4).[21,24] Historically, the place of service code 02 was used for traditional Medicare telehealth services. According to CMS, the place of service code 02 should not be used for practitioners newly providing VT as a replacement for in-person visits. Instead, the place of service codes listed in Table 4 are used.[24] Claims submitted using the place of service code 11 are reimbursed at the physician fee schedule nonfacility rate. When place of service code 19 or 22 is used for hospital outpatient departments, claims are reimbursed at the physician fee schedule facility rate, which is lower than the nonfacility rate. The facility may then submit a claim to receive a facility origination site fee even when the practitioner delivers VT from home.

The CPT code for VT outpatient visits is based on medical decision-making alone, without consideration of history or physical examination components, or based on total time (Table 5).[20,25] Time-based coding includes all time spent on the day of the visit: precharting, visit, and postvisit documentation. This change was already planned for 2021, but its introduction was accelerated due to the pandemic.[25]

When a resident or fellow participates in an E/M service using VT, the CPT code may also be chosen based on medical decision-making or total time. When billing is based on time, E/M visits are reimbursed only for the time the teaching physician is present in the virtual encounter (Table 6).[20,26] This method does not hold true for primary care centers. Through the primary care exception, which was expanded for COVID-19, residents can provide all levels of E/M services without direct interaction between the teaching physician and beneficiary and can bill using the modifier "GE." When a teaching physician interacts with a patient, according to CMS, documentation must describe whether the teaching physician was present in person or through VT.

Telephonic Visits

In the second interim rule written in response to COVID-19, CMS acknowledged that use of telephonic visits as a replacement for outpatient E/M services was more prevalent than expected; therefore, CMS began providing reimbursement and work relative value units for telephonic CPT codes (Table 7).[21] On the basis of

TABLE 4] Place of Service Codes for Outpatient Visits

Name	Definition	Code
Office	Location other than a hospital, skilled nursing facility, military treatment facility, community health center, state or local public health clinic, or intermediate care facility where ambulatory care is provided	11
On campus-outpatient hospital department	A portion of a hospital's main campus that provides diagnostic, therapeutic, and rehabilitation services to those who do not require hospitalization or institutionalization. "On campus" is defined as the physical area immediately adjacent to the provider's main buildings, other areas and structures that are not strictly contiguous to the main buildings but are located within 250 yards of the main buildings, and any other areas determined on an individual case basis, by the CMS regional office, to be part of the provider's campus.	22
Off campus-outpatient hospital department	A portion of an off-campus, hospital provider-based department that provides diagnostic and rehabilitation services to those who do not require hospitalization or institutionalization. "Off campus" does not meet the definition of "on campus."	19
Telehealth	The location where health services and health-related services are provided or received through a telecommunication system.	02

CMS = Centers for Medicare and Medicaid Services.

this new reimbursement method, the work relative value unit for a 30-min phone visit is coequal with a level 4 return patient visit. There is no current reimbursement for telephonic visits longer than 30 min.

Communication Technology-Based Services

Medicare has relaxed restrictions on virtual check-ins, remote evaluation of recorded images, and e-visits. These modalities can be used by new patients, and annual consent can be obtained at the time of the visit by providers or "auxiliary staff."[20] In addition, in rural health clinics or federally qualified health centers, the HCPCS code G0071 now includes e-visits.

Beneficiary Cost Sharing

Medicare cost sharing is applicable to all telehealth and telecommunications services. However, the Office of Inspector General stated there would be no repercussions to providers who or hospitals that reduced or waived cost-sharing obligations for VT, telephonic visits, or communication technology-based services.

Interstate Telehealth

As part of the federal 1135 waiver, practitioners providing Medicare in-person and telehealth services can request a licensure waiver to provide services in another state if the practitioner (1) is enrolled in Medicare, (2) has a license in the state associated with Medicare enrollment, (3) furnishes services in a state where the emergency is occurring, and (4) is not excluded from practicing in the state or any other state that is part of the emergency.[27] However, state requirements for licensing still apply.

The public health emergency pushed some states to issue waivers allowing providers to deliver telehealth from outside of the state, whereas others required in-state licensure but would allow out-of-state practitioners to obtain a license.[28] The need for medical licenses in multiple states to provide telehealth poses a challenge for practitioners whose established patients live across state lines.

Medicare Advantage

CMS allows Medicare Advantage plans to expand telehealth coverage for beneficiaries and reduce or

TABLE 5] Coding of Medicare Synchronous VT Visits During the COVID-19 Public Health Emergency on the Basis of the Total Time Spent on the Day of Visit or MDM

CPT[a] Code	Time, min	MDM
99202	15 to 29	Straightforward
99203	30 to 44	Low
99204	45 to 59	Moderate
99205	60 to 74	High
99211	0 to 9	NA
99212	10 to 19	Straightforward
99213	20 to 29	Low
99214	30 to 39	Moderate
99215	40 to 54	High

COVID-19 = Coronavirus Disease 2019; CPT = Current Procedural Terminology; MDM = medical decision-making; NA = not applicable; VT = video telehealth.
[a]Developed by the American Medical Association.

TABLE 6] Telehealth Coding Example Cases

Clinical Example	Code	Explanation
A physician has a scheduled 30-min return patient visit via synchronous audio and video telehealth. Both the patient and physician will be at their respective homes during the visit. Typically, the physician would see this patient in an office setting. The night before, the physician prepares by writing a basic note taking 10 min. The day of the visit, there is another 5 min of preparation reviewing prior data. The visit lasts for 25 min during which the physician discusses three stable chronic problems. Later the same day, the physician spends 5 min finishing the note and another 5 min speaking with the referring primary care nurse practitioner.	CPT[a] code 99215 Modifier 95 Place of service code 11	The physician spent a total of 40 min on the day of a synchronous audio and video telehealth visit. According to time-based billing, this visit corresponds to a 99215, or level 5 visit. The 10 min spent the day before the visit is not included. The modifier alerts Medicare to this being a telehealth visit using synchronous audio and video technology. Submitting this claim by using the place of service code 11 indicates to Medicare that this visit would typically take place in an office.
A fellow has a scheduled 60-min new patient visit via synchronous audio and video telehealth. The fellow, her supervising physician, and the patient will all be at their respective homes during the visit. Typically, the patient would be seen in a hospital-associated clinic that is located across the street from the main hospital (100 yards). On the day of the visit, the fellow spends 20 min preparing a note and reviewing data before the visit. The visit lasts for 50 min, during which the supervising physician joins for 10 min. During the visit, a new lung nodule is discussed and PET-CT imaging is ordered. Later the same day, the fellow spends 20 min completing the note, and the supervising physician spends 5 min attesting the fellow's documentation, which includes a personal interpretation of the prior imaging.	CPT code 99204 Modifier 95 Place of service code 22	The supervising physician spent a total of 15 min on the day of a synchronous audio and video visit. If a claim is submitted using time-based billing, the appropriate CPT code is 99202. Trainee time is not considered for time-based billing. If MDM is used, the appropriate CPT code is 99204, which reflects a moderate complexity problem, moderate complexity data reviewed, and low risk. The modifier alerts Medicare to this being a telehealth visit using synchronous audio and video technology. Submitting this claim by using the place of service code 22 indicates to Medicare that this visit would typically take place in an on-campus outpatient hospital department.

CPT = Current Procedural Terminology; MDM = medical decision-making.
[a]Developed by the American Medical Association.

eliminate cost sharing, but these changes are not required.[29] As an example, telephonic E/M services may be reimbursed less frequently by Medicare Advantage plans because of CMS handling of risk-adjusted payments. Normally, a Medicare Advantage plan receives a monthly capitated payment from CMS on the basis of the enrolled beneficiaries' health risk.[30] A higher health risk results in a larger capitated payment.[30] Health risk is derived from diagnosis codes documented at in-person or VT encounters. However, diagnosis codes from telephonic visits cannot be submitted for health risk adjustment and, therefore, cannot contribute to increased capitated payments from CMS.[31] This situation may be a disincentive to the coverage and reimbursement of telephonic E/M visits and disproportionally limit telehealth access for patients who would otherwise rely on telephonic visits, particularly those aged 65 years or older.[21,32]

Medicaid Before COVID-19

Reimbursement for Medicaid telehealth services varied widely among states. A report from the Center for Connected Health Policy published in 2020 with data from before the public health emergency highlighted these differences.[5] All states had policies in place that required Medicaid reimbursement for VT, but reimbursement restrictions were placed on the service, provider delivering the service, geographic location of the beneficiary, originating site, and whether there was reimbursement parity with similar in-person visits. Before the public health emergency, five states placed geographic limitations on telehealth services, and 19 states allowed the home to serve as an originating site.[5] However, home origination was not available for all services and could be restricted to mental health services or beneficiaries with chronic conditions.[5]

TABLE 7] Codes and Definitions for Medicare Telephonic Telehealth Visits During the COVID-19 Public Health Emergency

Description of Service	Time, min	CPT[a] Code	Work RVU	Equivalent In-Person CPT Code
Telephone E/M service provided by a physician or other qualified health-care professional, not relating to E/M services in the prior 7 days or leading to an E/M service in the next 24 h or soonest appointment	5 to 10	99441	0.48	99212
	11 to 20	99442	0.97	99213
	21 to 30	99443	1.50	99214
Telephone E/M service provided by a qualified nonphysician health-care professional, not relating to E/M services in the prior 7 days or leading to an E/M service in the next 24 h or soonest appointment	5 to 10	98966	0.25	NA
	11 to 20	98967	0.50	NA
	21 to 30	98968	0.75	NA

COVID-19 = Coronavirus Disease 2019; CPT = Current Procedural Terminology; E/M = evaluation and management; NA = not applicable; RVU = relative value unit.
[a]Developed by the American Medical Association.

Fewer states reimbursed for communication technology-based services. For example, only six states provided Medicaid reimbursement for e-visits as of March 2020.[5,33]

Medicaid Changes for COVID-19

Although coverage by Medicaid for VT has generally increased, variability among states remains. Differences exist in services covered, complexity of outpatient services covered, whether services could be offered to new or existing beneficiaries, and acceptability of HIPAA-noncompliant technology.[34-37] Further complicating matters, not all states require equivalent telehealth expansion by both Medicaid fee-for-service and Medicaid managed care organizations.[38] Therefore, within the same state, a service provided through VT may be covered by Medicaid fee-for-service but not covered by a Medicaid managed care organization.

In addition, there is variable coverage for telephonic visits, and CPT codes for telephonic visits may differ between Medicare and Medicaid. Augenstein and colleagues[39] reported that as of July 2020, 40 states had added Medicaid coverage for telephonic services through new service codes or use of prior E/M service codes.

The submission of a VT service claim to Medicaid varies by state and does not align with Medicare. Unlike with Medicare, states may require the place of service code 02, indicating telehealth services, with the addition of separate modifiers like GT (via interactive video and audio) as a substitute for modifier 95, and/or the modifier CR (catastrophe or disaster related).[40]

Commercial Insurance Before COVID-19

Laws existed in 42 states governing insurance coverage by commercial insurers for telehealth.[5] Most of these laws included a requirement for telehealth coverage parity but not reimbursement parity.[41,42] Insurance coverage parity laws state that a telehealth visit must be covered if equivalent in-person care is covered by the insurer. Reimbursement parity laws state that an insurance carrier shall reimburse a health-care practitioner who provides an E/M telehealth service on the same basis as one who provides a similar service in person. Only 10 states required reimbursement parity with in-person visits: Arkansas, Colorado, Delaware, Georgia, Hawaii, Kentucky, Minnesota, Missouri, New Mexico, and Virginia).[5,42] Twenty-four states required cost sharing to be equivalent for telehealth and in-person visits.[42]

Commercial Insurance Changes Due to COVID-19

The largest commercial payers in the United States increased access to telehealth, often for a limited time

specific to the declaration of a public health emergency. Telehealth coverage is heterogeneous on the basis of the plan, and reimbursement parity for VT or telephonic E/M services is not guaranteed.[43] This variability and limited service underscores the need for state legislation regulating commercial coverage and reimbursement of telehealth services, including telephonic visits. Many states enacted new rules broadening the use of telehealth, but none were directed at reimbursement parity other than that in Washington state.[37,39]

Discussion

The COVID-19 public health emergency has revealed the benefits of outpatient home synchronous telehealth as a substitute for in-person E/M visits. In a matter of weeks, barriers that prevented broader adoption of VT were removed: reimbursement regulations at the federal and state levels,[44] lack of patient and physician acceptance,[45-47] and cost of implementation.[46] Organizations and practitioners without prior telehealth capabilities transitioned to delivery of outpatient care through telehealth. Video and audio synchronous telehealth E/M visits increased substantially in March 2020, offsetting the reduction in in-person services.[48] In April 2020, 43.5% of Medicare primary care visits were provided through telehealth compared with 0.1% in February 2020.[49] FAIR Health, which maintains a database of billions of commercial and Medicare claims, reported an increase in telehealth claims from 0.15% in April 2019 to 13% in April 2020.[50] After reaching a peak in April, however, the percentage of telehealth visits has continually declined.[48] Reasons for this decline include increased in-person visits as offices reopened and uncertainty continued over the future of telehealth insurance coverage and reimbursement.

Overall, telehealth has been embraced by both patients and providers. Telehealth use improves the patient experience through reduced travel and shorter visit waiting times.[51,52] Approval ratings for VT as a replacement for in-person visits are high among both patients and providers.[51,53] Of patients surveyed in a gastroenterology and hepatology clinic after transition to VT in response to COVID-19, 96% reported being somewhat or very satisfied with the medical care, 78% thought the technology was easy to use, and 78% were somewhat or very satisfied with the quality of the experience.[53] However, building trust and rapport through in-person appointments remains important. Patients are more willing to have a VT visit with a known provider than someone with whom no in-person relationship has been established.[54]

There are clear benefits to the use of outpatient synchronous telehealth to connect patients and providers during the COVID-19 pandemic. New and existing patients are seen without leaving their homes, and patients with COVID-19 receive care while isolated at home or after hospital discharge. The benefits of outpatient telehealth before COVID-19 were centered on increasing access to care, particularly in rural and underserved areas, and convenience of receiving care.[55] Because of COVID-19, many providers connect with their own patients at home by using VT when they previously did not.

To date, there is scant evidence demonstrating whether quality of provider-rendered diagnosis and management for VT at home is equivalent to traditional in-person visits. In addition, the effect of increased telehealth use on malpractice claims is unknown.[56] To reduce risks for misdiagnosis, providers can perform a limited examination during the visit and ask patients to return for an in-person visit or further testing if feasible.[56,57] Home VT telerehabilitation seems to have equivalent outcomes when compared with in-person care.[58,59] Evidence also exists for the equivalence of VT used to provide telemental health and to provide care for patients with chronic illnesses such as heart failure and diabetes when combined with telemonitoring and/or mobile health.[58,60]

The effect of greater telehealth use on health inequities is unclear. In 2017, an estimated 5.8 million people in the United States delayed medical care because of issues with transportation.[61] Transportation barriers disproportionally affect those with lower socioeconomic status, Latino ethnicity, and functional limitations.[61,62] VT at home reduces the need to travel for care and may improve access for these vulnerable populations. However, VT at home requires both broadband Internet service and a mobile device or computer. Broadband Internet access reaches 97% of Americans in urban areas, 65% in rural areas, and 60% on tribal lands.[63] Demographic factors associated with lower access to broadband Internet include lower socioeconomic status, lower education level, African American race, Latino ethnicity, and being aged 65 years or older.[32] For adults with incomes $<$ \$30,000 a year, 29% do not own a smartphone, 44% do not have access to broadband Internet service, and 26% are dependent on smartphones for Internet access.[64] Therefore, expanded

insurance coverage for home VT may reduce transportation barriers while still resulting in less equitable access to health care for underserved populations.

Before COVID-19, one of the most used outpatient home E/M telehealth services was direct-to-consumer (DTC) telemedicine. DTC telemedicine differs from Medicare telehealth services, before the pandemic, because it occurs directly between a patient and a provider and is initiated by a patient rather than a provider at an originating site.[65] Consumers use DTC telemedicine for access to on-demand primary or urgent care 24/7.[65-67] When a DTC telemedicine visit is initiated, the practitioner reached may be someone with whom the patient has an existing relationship, an associate provider within the same practice or health system, or a new provider in a different organization.[54] DTC telemedicine service is offered by both health systems and commercial DTC companies like Teladoc, MDLIVE, and Amwell.[65]

Evidence suggests care delivered by commercial DTC telemedicine companies may be variable and not guideline concordant, although it may be improving.[68-70] In addition, despite lower costs per visit when compared to primary care or emergency care services, commercial DTC telemedicine may actually increase overall costs if its use does not result in a reciprocal decrease in in-person services.[71] One study showed that commercial DTC telemedicine visits were used to supplement, rather than substitute for, in-person services.[71] A report by the Medicare Payment Advisory Commission stated that commercial insurers covered DTC telemedicine because of employer request, competition from other insurers in their markets, and state telehealth parity laws but not necessarily to reduce costs.[67]

Without further legislation at the state and federal levels, the emergency waivers will eventually expire, resulting in the resumption of prior telehealth restrictions. To expand telehealth use permanently, several bills have been proposed in Congress.[72,73] In addition, through executive order, President Donald Trump requested that the Secretary of HHS propose a regulation extending broadened telehealth services beyond the public health emergency.[74]

Conclusions

To meet the health needs of the US population during the COVID-19 pandemic, federal and state governments, together with commercial insurers, have removed barriers to telehealth, permitting physicians and other practitioners to provide care at a distance. The patients who have benefitted most from the greater availability of home telehealth services are those who have difficulty leaving the home because of chronic illness, travel a long distance to see a specialist, or live in an underserved location with poor access to care. It remains unclear whether the expanded telemedicine services will persist beyond the pandemic. It is hoped that CMS and commercial insurers will maintain these vital services while keeping restrictions in place to prevent overuse. Further research is needed to better understand the quality and cost-effectiveness of outpatient E/M services delivered through VT at home. Finally, we need to ensure that those with the least access to the Internet and technology are not left behind in this health-care delivery revolution.

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