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Telehealth for Occupational Therapy

Introduction

In order to best understand telehealth for occupational therapy, you must first grasp the background of telehealth itself. Telehealth was initially established in the medical field as a way for providers to connect individuals in rural and underserved communities with healthcare. Such populations generally lack access to medical treatment and services with geographic location being the biggest obstacle to readily-available care. At this point, some larger facilities or programs who had the funding and technological expertise began using telehealth for occupational therapy. However, in the early 2000s, the use of telehealth in occupational therapy was still very small.

Around 2010, we saw a shift in the trends: there was an increase in solely-online companies that provided services within the school systems. Many of these platforms were initially established with speech-language pathology and psychology or counseling services, since those disciplines had already been in the telehealth sector for several years. A growing number of these companies included occupational therapy in their bundle of services. It's at this point that stand-alone telehealth companies offering occupational therapy, among other services, became more widespread. Before we discuss more specifics about telehealth and occupational therapy, it's important that we familiarize ourselves with the terminology that is commonplace within the field.

Terminology [1,2,3]

Application programming interface (API): Internal tools that make up a single operating system; developers use these tools and other resources to create applications, platforms, and software that can be used for the purpose of telehealth and telecommunication

Audio teleconferencing: The use of the voice or sound feature on communication devices; providers can use this tool to conduct meetings with patients or other providers and exchange health-related information throughout the service delivery process

Authentication: The process of confirming a user's identity to ensure a secure virtual experience; authentication is a key component of confidential telehealth

Bandwidth: The maximum amount of data that can be transferred in either direction across an internet connection; this may also be referred to as network bandwidth or digital bandwidth; having sufficient bandwidth helps establish reliable audio and video feed from both parties who participate in telehealth

Business Associate's Agreement (BAA): A contract that all telehealth software companies must sign before being recognized as HIPAA-compliant; this agreement requires that platforms detail each disclosure and use of the patient health information that goes through their program

Compressed video: A process that reduces the digital size of a video file; this process often results in lower-quality audio and/or video content, and is typically done so that videos can be sent more quickly

Distant site: The physical location of the healthcare provider at the time that telehealth services are being delivered; the distant site may also be referred to as a hub site, consulting site, provider site, or referral site

E-prescribing: The process of a qualified provider creating, transferring, and filling online prescriptions

Electronic health record (EHR): A digital collection of patient records across various different providers, facilities, and levels of care; EHRs typically offer a detailed, long-term view of a patient's medical history and travel with them throughout a certain geographic area

Electronic medical record (EMR): A digital version of a patient's printed medical records from one practice or provider; while some information from an EMR may be sent to other providers when a patient transfers, EMRs typically remain within the office of the treating clinician

Encryption: The internal transfer of plain text to coded data; this ensures that only authorized users have access to protected content or programs

Ethernet: Wired computer networks that transmit an internet connection through a cable; one end of an ethernet cable is plugged into a router and the other into your computer's modem

Health Insurance Portability and Accountability Act (HIPAA) of 1996: A law that requires all healthcare entities (medical facilities and independent providers) to implement measures that ensure the confidentiality of certain sensitive patient information; this does not include all data, rather specifically identifiable demographics such as names, social security numbers, genders, dates of birth, and contact information

HIPAA-compliant telemedicine platform: Software or programming that meets the following requirements:

1. Monitoring systems must be present to protect patient health information from breaches of any kind
2. Only authorized users can access patient health information
3. Secure communications (audio, video, or messaging) should be in place to protect patient health information

Insight: A telehealth platform's ability to compile health information from outside sources; once this data is collected, it is used by treating providers to help understand a patient's medical history

Internet protocol (IP): A unique number assigned to each device in a network; internally, devices on the same network use IPs to communicate; externally, IPs are used for identification and location purposes; if you work at a large facility, technical support may need your IP to help troubleshoot your device issues remotely; IPs are also known as IP addresses and can be found in the wifi section of your device

Kiosks: A self-service piece of equipment that patients can use independently to log in and interact with a provider in real-time; kiosks often come with equipment such as thermometers, blood pressure machines, and pulse oximeters to assist in the diagnostic and treatment process; also known as patient kiosks

Latency: Used to describe a network's ability to process a high volume of data (including streaming, browsing, and messaging); a network with low latency will have minimal delays and can perform more quickly, while high latency is associated with more lags and programs freezing

Mobile clinic: A self-contained unit such as an RV or van that travels to various underserved geographic locations and provides necessary services such as screenings, lab tests, and vaccinations; many mobile clinics also help connect individuals with telehealth visits for specialty care

Multi-way video: A video conference with the capability of adding multiple participants from separate devices

Originating site: The physical location of the patient at the time that telehealth services are being delivered; the originating site may also be referred to as the patient location

Patient portal: A secure webpage that patients can access 24/7 from any internet-connected device to view their medical records and health information

Peer-to-peer telehealth: Providers using audio and/or video teleconferencing to exchange information and collaborate on the care of mutual patients

Peripheral devices (peripherals): Computer or device accessories that collect and send input from the patient's device to a provider's device; these tools can be used for diagnosis or treatment and can include blood pressure monitors, pulse oximeters, thermometers, and more depending on the patient's needs (see the equipment section for more information)

Patient health information (PHI or ePHI): Any information that was created for the purposes of treatment or diagnosis or relates specifically to the patient; PHI differs from other types of data in that it can be traced back to the patient; PHI includes:

- Name
- Any aspects of a patient's address other than their state of residence
- Telephone and fax number
- Medical record or account number
- Health insurance plan number
- Dates that are more specific than years, including birthdate, death date, admission date, discharge date, or age
- Email address
- Social security number
- Numbers or identifiers associated with medical devices, such as implants
- Vehicle markers, including license plates and VIN
- Website
- Fingerprints, voice recordings, or photographs
- Internet Protocol (IP) address

Picture-in-picture: A device feature that allows one program to be displayed in full-screen while another running program is visible in a small, floating box in the corner

Real-time: A function that is processed instantly; real-time can be used to describe features such as messaging or programs such as on-demand video calls

Software as a service (SaaS): Software applications that are hosted through one central location and are available via a subscription; some examples are WebEx, Dropbox, and GoToMeeting

Store-and-forward (asynchronous): Telecommunication involving information storage at a neutral location followed by transmission to a final destination; information can be sent both ways but store-and-forward allows a delay between the interaction; an example of store-and-forward technology is a secure patient-provider messaging system

Synchronous: Telecommunication where information is transmitted in both directions between two parties at the same time; an example of synchronous technology is live video chatting

System integration: Combining all the features and subsystems so they create one fully-functioning program

Telehealth: The use of telecommunication and other technologies to assist in providing clinical or non-clinical services long-distance; telehealth can include messaging, video conferencing, remote admissions, appointment reminders, scheduling, and more; telehealth is broken down into three subcategories based on the technology used

- **Telemedicine (virtual care):** Clinical services, including diagnosis, intervention, and assessments provided remotely
- **mHealth/eHealth:** The use of smartphones, mobile phones, or tablets to assist in any aspect of healthcare delivery
- **Remote patient monitoring (RPM):** The secure collection of patient data from one place (typically home, community, or hospital) and transmission of this information to their provider in another location; this data is used to inform the patient's plan of care and the recommendations they receive; RPM is also known as telemonitoring

Telehealth technician: A rehabilitation aide who is present at the patient site and can assist with administrative and technical issues that may arise during the telehealth process; in school-based settings, the telehealth technician may be referred to as an e-helper

Virtual private network (VPN): A connection that sends your data through an encrypted line to provide added security; this also conceals your internet protocol (IP) so that your location is unknown

Webside manner: The online equivalent of bedside manner, which suggests that providers follow certain etiquette to ensure their patients have a positive experience

Section 1: Rules and Regulations

4,5,6,7,8,9,10,11,12,13,14,15,16,17,18

Telehealth has gotten quite a bit more attention in recent years and, as a result, this has led to an increase in rules, regulations, and policies governing the terms of its use. In a broad sense, telehealth can only be implemented if it has the appropriate infrastructure to support it. A company providing telehealth in any form must develop protocols firmly rooted in best practice to ensure the integrity of services.

Initial visits

Companies wishing to adopt telehealth must firstly decide the manner in which initial and treatment visits will be provided. In certain disciplines, such as internal medicine, legislation states that the first patient encounter must be completed in-person and the remainder of treatment can be provided via telehealth.

While there is no such policy limiting the practice of occupational therapy, some managers may find success in beginning each patient plan of care in-person and transitioning to remote treatments. This serves the purpose of establishing rapport in a way that is more familiar to most patients. Clinic managers must carefully weigh this decision since providing initial in-person visits means they will need to pay overhead for a clinic space, complete with equipment and staff. For companies that already have an established therapy space and are simply adding telehealth to the services they offer, this may be an ideal choice for their business. However, it may not make sense for a virtual care company to go this route due to the added cost and management duties.

On the other hand, companies with more funding or experience in the virtual care space may obtain peripheral devices that allow assessments to be entirely and effectively completed remotely. If done the right way using good webside manner, telehealth providers can make initial visits a positive experience all the way through the assessment process.

Adopting an in-person visit policy can be complicated by the broad nature of occupational therapy intervention, since the field is not limited to a clinic, hospital, school, or institution. In instances like ergonomic consulting, home modifications, and program development, it may be appropriate and suitable for an occupational therapist to keep services exclusively virtual. For this reason, it is important that the treating provider uses their clinical discretion when determining what type of service delivery is best for the patient's needs.

In 2011, 14 states had legislation that outlined the specifics of telehealth speech language pathology services. However, this same verbiage for telehealth occupational therapy services was only in place for 4 states. This has changed now that we are in the era of increased telehealth access due to COVID. Yet, there are legislative inconsistencies now more than ever so occupational therapists need to assess these regulations to determine where their state stands on the use of telehealth. It is always best practice to consult the American Occupational Therapy Association's (AOTA) website, as they aim to compile this relevant information for providers.

Documentation

All forms of documentation are important to the field of occupational therapy. We typically think of insurance reimbursement as being the primary reason that paperwork is so critical. However, documentation also provides evidence for the work we do and protects us by ensuring we are practicing in accordance with HIPAA and other related legal requirements.

The start of a plan of care is typically associated with the most paperwork and consent forms are a large part of this. Consent forms are an important part of establishing the patient-provider relationship since they outline information that makes patients better informed and more confident in the care they are receiving. General consent forms help patients understand their privacy rights, the intent of the treatments they will receive, and the projected timeline for therapy. Some areas that should be covered include:

- Confidentiality disclosure
- Communication using email, text message, or voice calls
- Cancellation policy
- Release of information
- Benefits and potential risks

- Fee disclosure

Patients should always receive this information at the start of care, but the use of telehealth necessitates additional forms. Regardless of how many telehealth visits are provided, companies must develop a second set of consent forms that include verbiage specific to technology. Since there have been a range of policy changes surrounding the use of telehealth, it is important to ensure that patients fully understand what they are agreeing to. Your telehealth consent form should include all the foundational sections above, but should also cover added risks of telehealth and consent to audio and video conferencing. If there is the potential for recording as part of the therapeutic process, this also must be included. An example of telehealth verbiage may state:

- "I have a right to confidential telehealth treatment and communications as per the same laws that ensure confidential in-person occupational therapy treatment."
- "While [insert company name] fully complies with HIPAA regulations, I am aware that participating in telehealth occupational therapy comes along with risk of interrupted or distorted audio or video transmission, miscommunication resulting from the aforementioned issue, risk of being overheard by nearby individuals, and unauthorized persons accessing medical information."
- "I am responsible for completing telehealth communications in a private, quiet area to maximize my confidentiality and comfort."
- "I understand that the platform I am using allows for audio and video recording, but my therapist will not use this feature without my explicit permission and written consent."
- "I understand that telehealth may not be effective for all aspects of the occupational therapy treatment plan. In these instances, my therapist will discuss with me the possibility of a referral to a provider who offers in-person treatment."

The general public still may get a lot of misinformation surrounding telehealth, so it is important to provide content that explains the details of telehealth in a clear, comprehensible manner. The National Consortium of Telehealth Resource Centers made a document that can be disseminated to patients or can aid in the creation of material that is more appropriate for your practice.

COVID-19

Due to the sudden nature of the novel coronavirus pandemic (COVID-19) in early 2020, governing bodies swiftly developed legislation in accordance with the national public health emergency. In many states, lockdowns led to the emergency allowance of telehealth services for many disciplines that offered in-person care, including occupational therapy. This motion led the Centers for Medicare and Medicaid Services (CMS) to temporarily permit provider reimbursement for such services. You can find the updated verbiage on general telehealth services, with more specific information such as statutes and eligible providers, at the Center for Connected Health Policy. AOTA has also compiled state-specific telehealth regulations for OT's present scope of practice in this emerging practice area.

Since the initial CMS authorization of telehealth services, there have been many changes in legislation. Many of these modifications include extensions of the emergency orders, while others focused on adding more flexibility and additional services to the list of those currently approved:

- Patients participating in telehealth visits from any and all settings that are convenient for them
- Elimination of certain limitations on frequency of telehealth visits
- Converting the first visit from in-person to telehealth for the purposes of establishing the plan of care
- An increase in the types of providers who may offer telehealth services
- Temporarily-waived Medicare copay for telehealth visits
- Allowance of audio-only evaluations for some management services where this type of encounter is feasible

Malpractice Coverage

All occupational therapists are encouraged to get malpractice insurance (also known as liability insurance or professional indemnity insurance). This offers them and their license protection against claims that may arise in the workplace. Claims may be filed by patients or colleagues and can result from suspected or proven patient negligence, harm, accidents, and other incidents that may occur on the job.

These policies typically cover any treatment that an occupational therapist provides. However, not all malpractice insurance includes coverage for telehealth services since it is not officially adopted in each state. Some policies will offer supplemental telehealth coverage for an added fee, while others provide no protection at all. It is important to look into this when beginning work in telehealth or when seeking out new carriers for malpractice insurance. If you opt to seek a new policy with more comprehensive coverage, be sure that you also look into policies with telehealth coverage across state lines, since this will be necessary for most telehealth work. Minimum coverage limits on policies may also impact a therapist's ability to provide effective care, so do your research before making a decision.

HIPAA & FERPA

Perhaps one of the most important considerations related to the implementation of telehealth occupational therapy (and telehealth for any other health profession) is the Health Insurance Portability and Accountability Act of 1996 (HIPAA). HIPAA remains a major barrier to telehealth adoption, since all programs associated with the treatment process must have safeguards in place to protect patient health information.

Due to the rapid switch to telehealth at the start of COVID-19, the U.S. Department of Health and Human Services Office for Civil Rights temporarily waived HIPAA violation penalties. This decision was made in light of a short-term prioritization of care continuation over confidentiality. While this seems to be a major change in the way healthcare providers operate, therapists are discouraged from letting HIPAA compliance fall by the wayside, especially since the State Attorney Generals have not issued similar statements about patient data protection. Most states still abide by Section 13410(e) of the HITECH Act that allows them to issue monetary penalties for HIPAA violations. Due to the disparity between telehealth laws on the state and federal levels, always check the regulations in the state where you practice for the most up-to-date information.

Shortly after the start of the pandemic, the Office of the National Coordinator for Health Information Technology (ONC) released a set of regulations governing access and limitations of patient data. This led to the modification of application program interfaces (APIs) in an attempt to meet standards. It is expected that this particular regulation will remain in place after the pandemic, so companies should be prepared to develop or modify programming to this level.

In order to remain in compliance with HIPAA, be sure to pay close attention to some of these basic considerations:

- For any application, disable features that allow data to be collected by third-party agencies or marketers
- Enable multi-factor authentication for added security on all mobile devices and tablets
- Password-protect all stored audio, video, and image files
- Use encrypted channels for all message and voice communications between providers and patients
- Designate specific telehealth workstation(s) to increase confidentiality
- Educate patients on how to furnish a private space to participate in telehealth sessions at home, using earbuds, soundproofing wall panels, closing doors, blocking off rooms with dividers or cubicles, sealing door jams and other small spaces; if this is not possible, encourage patients to use their tablet or phone for sessions while in alternative spaces such as the backyard or their car
- Create workplace policies that limit information access to authorized personnel on a "need to know" basis
- Providing patients with educational materials on HIPAA and the measures you and your company are taking to enforce these regulations
- Implementing regular HIPAA compliance trainings for non-clinical and clinical staff to delineate each profession's role in data privacy and confidentiality
- Carefully assess medical devices and other applications for data privacy issues, since FDA guidelines (and not HIPAA guidelines) often apply here
- Complete cybersecurity risk assessments on the electronics within your organization to learn areas of weakness; computers are most often vulnerable to phishing and viruses

A somewhat lesser-known regulation that exists within schools is the Family Education Rights and Privacy Act, also known as FERPA. You can think of this as the HIPAA of the education system in that it protects the privacy of student's documents and information. FERPA also affords parents (and students over the age of 18) the ability to access education-based records, request changes to documents as needed, disclose certain

information after providing written consent, and file a complaint if they feel privacy rights have been violated. Just as there are HIPAA considerations that become more tricky with the use of telehealth, there are similar situations that require professionals to adhere closely to FERPA guidelines. Professionals must take extra care to:

- Remind parents and students that consent can be given in writing or from an electronic signature
    - Follow school guidelines if they warrant specific consent forms, authentication, and specifying the need for record release
- Safeguard student records in a secure location when they take them outside of the school to complete their work
- Use online platforms that are in compliance with FERPA
    - Since FERPA is a privacy rule and does not set forth specific security standards, there is no list of FERPA-approved platforms; however, certain platforms are temporarily acceptable for use due to COVID restrictions
    - Just as there are currently exceptions to standard HIPAA guidelines, this may change after the public health emergency ends, so be sure to read all policies and verbiage closely before using any technology
- Disclose student information virtually only in accordance with the school official exception to FERPA's consent requirement
    - This requires the provider have a legitimate educational use for the information
- Ensure that no identifying or sensitive information about students is disclosed during class time, in the event that non-students are observing
    - Follow your school's policy on visitors during class time and sharing lesson plans or other materials
- Record class sessions only when there is no sensitive information part of the video and/or audio
    - Follow your school's policy regarding when and where such recordings can be shared and for what purpose

Licensure [19,20,21,22]

In order to practice as an occupational therapist or occupational therapy assistant, a provider must be licensed. Licensure can get somewhat complicated when a therapist works in telehealth, since there are mandates that require a therapist to not only be licensed in the state where they reside, but also in the state where their patient lives. This is called cross-state or interstate licensure and it helps minimize the risk that a therapist incurs when they treat patients and practice in the virtual care space.

In some cases, therapists may run into exceptions. For example, the Department of Defense and the Veterans Health Administration require therapists to obtain additional credentials before providing telehealth occupational therapy to patients within their networks. Yet, their licensure policies are not as strict to allow improved access to the underserved veteran population. The STEP Act eliminates the need for therapists to have a license in the patient's state in order to provide telehealth services.

There are not many ways around this, since it's a requirement across all states where a therapist might serve telehealth patients. Some states offer temporary permits, which allow occupational therapists and occupational therapy assistants short-term coverage to work in clinical settings within that state. However, temporary permits are not available for everyone nor are they provided in isolation. In a select number of states, therapists who have pending applications for state licensure are given the option of purchasing a temporary permit for an added fee. This temporary permit is typically valid for 30-60 days and affords therapists the benefit of getting to work early while their official licensure application is approved. Since this option is not offered in every state, therapists should do their research before pursuing additional licensure. As of 2020, AOTA has compiled a document outlining each state's requirements for an occupational therapy license and an occupational therapy assistant license.

Some professions, such as nursing and physical therapy, have compact or multi-state licensure options. After a provider completes one set of paperwork and other requirements and waits for several weeks, they should then have an active license to practice in multiple states. Compact licensure approval is not able to be customized, as it is given for a predetermined set of states (typically between 7 and 9) who have previously agreed to and approved the compact. As you can imagine, this is highly useful for therapists who work exclusively in telehealth or those who do short-term contract work across many states.

Starting in 2019, AOTA began the process of approving legislation for an occupational therapy licensure compact. Since each state within the compact must individually approve the policy, this legislation is expected to be finalized by 2024. States were given the AOTA-approved verbiage in November 2020 and the next step is getting the green light from each regulatory board and agency. A multi-state licensure compact benefits providers and patients alike. This new legislation gives patients increased access to occupational therapy and further establishes the field's reputation while offering providers more flexibility and enhancing communication between each state's regulatory boards.

Section 2: Additional Considerations [23]

Continuing Education Requirements

The onset of COVID also brought more flexibility in the areas of continuing education. Many state boards temporarily waived the continuing education requirements to encourage providers to continue practicing in high need areas throughout the public health emergency. This was also intended to help therapists seeking multi-state licensure. Most states require between 0 and 24 hours of continuing education units (CEUs) in order to maintain and renew an occupational therapy license. Depending on the renewal cycle, these units typically must be fulfilled every 1 to 3 years. AOTA has compiled policies from each state regarding continuing education requirements to ensure therapist's have accurate, up-to-date information to maintain their licensure.

Continuing education is traditionally thought of as attending courses, seminars, conferences, webinars, and other types of educational gatherings. However, according to AOTA's definition of CEUs, units can also be fulfilled through volunteer work, presenting or writing scholarly work to be published or presented, supervising fieldwork students at your place of employment, and teaching at an accredited program for occupational therapists or occupational therapy assistants. Despite the leniency that states are currently offering surrounding CEUs, this type of academic work is an important aspect of upholding the reputation of the profession while keeping a therapist's skills and knowledge as recent as possible.

Maintaining Ethical Practice

Providers must demonstrate impeccable ethics in all therapeutic situations, especially telehealth. Since many patients are unfamiliar with this mode of care or may be hesitant

of technology in general, it is important to tread carefully during patient encounters. While having consent is vital, it doesn't end with receiving written consent for telehealth services at the start of care. Therapists must be sure to ask for consent before implementing new tools or methods to better engage with their patient or more effectively do their job.

Certain areas of practice may require an occupational therapist to make changes to better assess body structures and functions such as trunk mobility, postural asymmetry, proximal edema, and more. In such instances, providers may request that patients wear multiple layers of clothing, roll up sleeves, slightly lift up shirt bottoms, and make other adjustments. This can help them get an unobstructed view of the spine, pelvis, torso, upper back, and other relevant body parts. Providers must be sure to give patients and their caregivers the associated rationale to prevent any misunderstandings or assumptions. This is also a good opportunity for clinicians to reinforce that there will be no video or image capture used, nor will anyone else be present on the provider side except for the therapist. Despite taking these precautions and providing reassurance, therapists must account for some patients utilizing their right to decline any part of treatment. In such cases, it is appropriate for therapists to request an in-person visit to complete this assessment. They may also search for information from other providers' documentation or the patient's medical history or ask the patient to perform functional activities that allow them to determine factors such as symmetry, stability, and coordination. In some cases, therapists can guide caregivers to observe certain aspects of the patient's body function and performance, which may provide some supporting information.

AOTA outlines some of the following ethical considerations for therapists to keep in mind before and throughout the telehealth service delivery process:

- Abiding by occupational therapy laws and scope of practice when providing services via telehealth
- Adhering to professional standards set forth in the OT Practice Framework, 4th Edition
- Following all company-specific guidelines in the event of a data breach
- Continually assessing the effectiveness and appropriateness of all occupational therapy interventions and making adjustments as needed to help patients toward their goals outlined in the plan of care

- Remaining culturally competent and culturally sensitive of all patients' personal factors, including educational background, ethnicity, language, and socioeconomic status

Supervision

Maintaining supervision requirements is another important consideration that occupational therapists who collaborate with occupational therapy assistants should be mindful of. Many therapists are used to working closely with assistants in clinical settings where observation is as simple as walking down the hall to their treatment room. However, some therapists may have circumstances that require them to be elsewhere in a large hospital or travel between facilities in order to maintain their caseload. In this case, completing supervision requirements in-person may be difficult to do alongside all their other job duties. Therapists who use good judgment can utilize technology to video conference and discuss difficult patients, clinical issues, documentation questions, and more with their therapy assistant. In the event that a therapist needs to supervise an occupational therapy assistant completing a patient session, it is important to go through the standard process of obtaining written consent and explaining to the patient why this is necessary.

Equipment [24,25,26,27,28]

Telehealth is only as good as the technology behind it. Infrastructure like protocols and policies are certainly vital to success in this practice area, but none of that matters if a therapist is using outdated devices or a platform full of glitches and bugs. For most telehealth encounters, which typically consist of virtual care visits, the minimum requirements are an Internet connection and a smartphone or a computer with a webcam. However, there many other devices that play a major part in the delivery of telehealth, including:

- Patient exam cameras
    - Gooseneck camera: a plug-in camera with an adjustable neck that can be adjusted side-to-side as well as up and down as needed
    - Built-in webcam: an embedded webcam that comes as a standard feature on most recent laptop models; these can only be physically adjusted by moving the laptop screen up and down

    - Document camera: this stand-alone camera is attached to a base and has a long neck that allows an overhead view of the tabletop where your computer is; this device plugs into the USB port of most desktop and laptop computers
    - Set-top camera: a stand-alone webcam that plugs into the USB port of most desktop and laptop computers; these can be adjusted side-to-side as well as up and down as needed
    - Digital camcorder: a portable, handheld recorder that can store video and audio content on a tape, disc, hard drive, or memory card; from these sources, content can be edited and sent; patients may use this device to record themselves completing home exercises and to their therapist for viewing and assessment
    - Digital camera: a handheld camera that can store picture content on a hard drive or memory card; from there, content can be edited and sent; patients may use this device to send materials (such as documentation of their home environment or exercise completion) to their therapist
- Kiosks: Shared workstations that patients can utilize to participate in on-demand, virtual care appointments with healthcare providers
    - Private kiosks: fully-enclosed units equipped with a range of peripheral devices; these kiosks can be rented for use in corporations, retail settings, community centers, schools, and more
    - Tabletop kiosks: smaller, desk-sized kiosks with a few peripheral devices; these kiosks can be rented for use in corporations, retail settings, community centers, schools, and more
- Internet connection: most commonly divided into two groups, dial-up and broadband; dial-up is almost obsolete but there are several broadband options, listed below starting with the highest speed
    - Fiber optic: this route, which is not always available in all rural or even suburban areas, can transmit large amounts of data quickly
    - Cable: this type of internet uses the same connection as cable TV does and can often be hooked up through those same companies; cable internet can offer higher speeds than DSL in some areas

    - Digital Subscriber Line (DSL): the connection for DSL looks similar to that of a phone line, but offers much faster transmission than dial-up; you can often get DSL from companies that offer phone services
    - Satellite: this is the most readily available service in the US since it's wireless; its capabilities are similar to those of DSL and cable, but latency makes this one of the slowest broadband options

- HIPAA-approved platform: due to COVID, this is the "equipment" that currently has the most variability because:

    1. Due to COVID, penalties for HIPAA violations have been temporarily waived; this means that programs that are currently HIPAA-compliant may not be HIPAA-compliant once the public health emergency ends, so the term will need to be reviewed again
    2. There are a range of platforms with various offerings; for example, some software comes with an EHR embedded and others do not, so businesses must have separate HIPAA-compliant programs for each; some platforms offer secure messaging and others offer none or a feature that doesn't meet HIPAA's standards

        Here are some of the big names in healthcare video conferencing, all of which market themselves as HIPAA-compliant:

        - Skype for Business
        - Microsoft Teams
        - Updox
        - VSee
        - Healthie
        - Doxy.me
        - Simple Practice
        - SecureVideo
        - Chiron Health
        - Medici

- EVisit
- Zoom for Healthcare
- Webex for Healthcare
- Amazon Chime
- G Suite/Google Meet
- Spruce Healthcare Messenger
- GoToMeeting

While the use of the following peripheral devices is not within an occupational therapist's scope of practice, these devices can assist in the telehealth process for other disciplines:

- Peripherals: these devices are specific to the telehealth process and are used to assist with diagnostics and treatment
    - Digital otoscope: used to view the inner ear canal
    - Digital stethoscope: to electronically hear and count heart beats and lung respirations
    - Interactive voice response (IVR): a messaging device that allows patients to record answers to daily health management questions
    - Fundus camera: to view and record the inner structures of the eye
    - Electrocardiogram (ECG): to track heart rhythm
    - Vitals monitor: to record temperature, blood pressure, heart rate, and oxygen saturation
    - Remote scales: used to track a patient's weight
    - Fluid status monitor: a device that utilizes small frequency electric current to determine fluid in the thoracic cavity; low levels of resistance against the current indicate more fluid is present, while high levels of resistance indicate less fluid
    - Ultrasound probe: the general probe comes with specialty probes for assessing vasculature, the endocavity, and structures in the eye

- Personal emergency response system (PERS): a remote monitoring system used to ensure the safety of patients within their homes
- Spirometer: used to virtually complete pulmonary function tests (PFTs)
- Glucometer: used to test blood glucose levels

Insurance reimbursement [29]

Insurance companies have been divided on telehealth reimbursement for years now, and COVID only magnified the differences across state lines. 2020 brought the onset of telehealth parity laws. Each state has laws that govern the coverage of remote patient monitoring and the use of store-and-forward technology. Similar, but more extensive laws, govern virtual care visits. As of February 2021, 43 states have an active telehealth parity law with a coverage provision, meaning they must cover telehealth services as if they were in-person services:

- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Georgia
- Hawaii
- Illinois*
- Indiana
- Iowa
- Kansas

- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan*
- Minnesota
- Mississippi
- Missouri
- Montana
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Dakota
- Nebraska
- Ohio
- Oklahoma*
- Oregon
- Rhode Island
- South Dakota
- Tennessee
- Texas

- Utah*
- Vermont
- Virginia
- Washington*
- West Virginia

*indicates states with limited coverage

There is also a reimbursement provision to the telehealth parity law, which fewer states have adopted. This clause states that private insurance companies must use the same reimbursement rate for telehealth services as they use for in-person services:

- Arkansas
- California
- Colorado
- Delaware
- Kentucky
- Georgia
- Hawaii
- Louisiana
- Massachusetts
- Minnesota
- Missouri
- New Hampshire
- New Jersey
- New Mexico
- North Dakota

- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington

Previously, state requirements also mandated that patients participate in virtual visits while they are physically stationed in clinical settings such as hospitals or outpatient clinics. However, many states have forgone this law in favor of making telehealth more accessible to those who need it, with Tennessee being the only remaining state with such a law in place.

Medicare Reimbursement [30,31,32]

After some initial resistance, Medicare Part B now offers coverage for certain telehealth services. This includes psychotherapy, monthly home dialysis visits for individuals with End-Stage Renal Disease (ESRD), diagnostic- or treatment-related services for acute stroke, and services for substance use disorders and co-occurring mental health conditions. Medicare recently began allowing the use of telehealth for certain emergency room visits, physical therapy, and occupational therapy, so these services can be accessed by patients at home without a provider present. This coverage also extends to include check-ins and full virtual care visits. These are the telehealth services and CPT codes that Medicare will now reimburse for:

- Telehealth care visits with new or established patients
    - 99201-99215: Office visits, other outpatient visits
    - G0425-G0427: Inpatient admission or emergency consultations
    - G0406-G0408: Follow-up inpatient consultations in hospitals or SNFs
- 5-10 minute virtual check-ins via audio or video call with established patients
    - G2012
    - G2010

- E-visits using an online portal for established patients
    - 99421
    - 99422
    - 99423
    - G2061
    - G2062
    - G2063

Prior to 2017, Medicare telehealth claims required the GT modifier alongside the CPT code. This code has since been eliminated and providers are encouraged to use the 02 service code, which requests that services be reimbursed at the normal facility rate per the Medicare fee schedule.

Medicare is continually updating the list of CPT codes for services that can be billed via telehealth since the start of the public health emergency. The most recent list updated in March 2021 shows the following codes relevant to occupational therapists:

- 96110 - Developmental screening with scoring (temporary approval due to COVID-19); **this code is not covered by Medicare**
- 97110 - Therapeutic exercise (temporary approval through the end of the year the public health emergency ends)
- 97112 - Neuromuscular reeducation (temporary approval due to COVID-19)
- 97116 - Gait training therapy (temporary approval due to COVID-19)
- 97150 - Group therapeutic procedures (temporary approval due to COVID-19)
- 97165 - Occupational therapy evaluation: low complexity (temporary approval through the end of the year the public health emergency ends)
- 97166 - Occupational therapy evaluation: moderate complexity (temporary approval through the end of the year the public health emergency ends)
- 97167 - Occupational therapy evaluation: high complexity (temporary approval through the end of the year the public health emergency ends)

- 97168 - Occupational therapy re-evaluation to establish a plan of care (temporary approval through the end of the year the public health emergency ends)
- 97530 - Therapeutic activities (temporary approval due to COVID-19)
- 97535 - Self-care training (temporary approval through the end of the year the public health emergency ends; **audio-only encounters are eligible for reimbursement using this code**
- 97542 - Wheelchair management (temporary approval due to COVID-19)
- 97750 - Physical performance test (temporary approval through the end of the year the public health emergency ends)
- 97755 - Assistive technology assessment (temporary approval through the end of the year the public health emergency ends)
- 97761 - Prosthetic training (temporary approval through the end of the year the public health emergency ends); **therapists can only use this CPT code via telehealth for the first encounter**

Section 3: Goals of Telehealth [33,34]

The main goal of telehealth in any practice area is to increase access to services for individuals with geographic barriers, lack of resources, and the inability to seek care on their own. According to AOTA, telehealth service delivery can increase a therapist's ability to build a patient's skills, use adaptive techniques and assistive devices, modify their environments (including home, school, work, community, and social contexts), and establish habits and routines that promote personal health and wellness.

AOTA outlines the following goals and benefits of providing occupational therapy services via telehealth:

1. **Increased service delivery for underserved and standard populations**

   In alignment with the initial impetus for telehealth services, its use expands access to those with geographic barriers that may prevent them from seeking or receiving care.

2. **Broader access to a range of specialty providers and services**

Patients will be able to access specialized, more appropriate services that better meet their needs regardless of where they or the provider are located.

3. **Decreased medical bills resulting from complications due to lack of treatment**

   By removing barriers to receiving treatment, this will also result in fewer medical complications that may arise from a lack of care.

4. **Greater provider productivity**

   Providers will have less obligations due to the elimination of morning commutes or travel time between clinics or patients, which allows them to be more productive during their working hours.

5. **Less wait times and delays that may be associated with coverage limitations for in-person care**

   Due to an increase in productivity, providers will be able to see more patients. In turn, this cuts down and (in some instances) eliminates wait time for patients.

6. **A lower rate of hospitalization or re-hospitalization associated with gaps in care or poor follow-up**

   Providers will have the bandwidth to follow up on all patients who are discharged. This check-in ensures home resources (recommendations, equipment, etc.) are in place, which is another way that telehealth prevents medical complications.

7. **Lower organizational expenditures**

   When patients have more rapid access to care, this reduces the need for specialty care due to complications or unmanaged health concerns. Organizations also have less costs associated with clinic spaces, unnecessary and preventable emergency department visits, or transportation expenses for standard visits.

8. **Fewer providers experiencing burnout from work-related stressors**

   With the elimination of a commute, the absence of a busy office environment, and more autonomy in treatments, providers will feel increased job satisfaction and less occupational burnout.

9. **Improved patient and provider engagement in the therapeutic process**

When patients are receiving care from therapists with less burnout, they will receive better care and increased engagement/motivation in the treatment process.

10. **More convenience for providers and patients**

    There is more convenience to be had from both patients and providers completing sessions from the comfort of their own home.

11. **An increase in the significance of patient outcomes**

    With the elimination of wait times, commutes, and coverage gaps, patients will feel more at ease in the therapeutic process. This will lead them to engage more in the care, which will result in greater functional outcomes.

12. **Increased practitioner collaboration, which leads to more patient-centered care**

    Just as there are less barriers to patients and providers working together, there are also less obstacles to interprofessional collaboration. In large hospitals or rehab departments with a big staff of therapists, it may be difficult to find a time during the work day when providers can meet to talk about cases, workshop methods, and mentor one another. This allows for more open communication and better care.

13. **Challenges such as scheduling conflicts, socioeconomic and language barriers, social stigma, and a lack of consistent transportation will have less of an impact on care**

    Patients can receive care that is private, consistent, personalized, and true to their needs, which allows the care to be more effective in all aspects.

14. **Offers support and autonomy for disease management**

    With patients being seen in the most natural of settings (their homes and the community), telehealth sessions will focus on instilling a greater sense of independence in the area of health maintenance. This will empower patients to take charge of their health, a feeling that will hopefully continue after they are discharged.

15. **Increased reimbursement from payers like Medicare and Medicaid**

With more evidence being provided for the efficacy of telehealth, organizations are receiving reimbursement for a growing number of services. Added reimbursement also increases the amount of telehealth programs that will be formed, since it is a cost-effective service for clinics and hospitals to offer.

Barriers to Telehealth

Just as there are many advantages to telehealth, there are also barriers that can negatively impact the treatment process if they are not properly addressed or accounted for. Many of these are avoidable if therapists take the appropriate measures.

1. **Attention**

   Perhaps one of the issues that therapists using telehealth struggle with the most is keeping their patients' attention. The extent to which this barrier impacts care is largely dependent on the population that therapists are working with. It is typically most difficult to keep pediatric patients on task, especially without the presence of a parent, caregiver, or e-helper. However, patients with cognitive impairments may also struggle with symptoms like attention, anxiety, restlessness, and hyperactivity that impact their ability to focus on the care being provided.

2. **Screen fatigue**

   This can serve as an issue for patients and providers alike. Therapists may struggle with straining their eyes and becoming generally more fatigued due to spending long hours looking at their screen. However, this may also be the case for patients despite them attending sessions for only 30 to 60 minutes once or twice per week. Some patients may not be accustomed to using a computer for extended periods of time or they may have pre-existing vision concerns that the screen exacerbates. Typical occurrences associated with computer usage (such as echoes, volume adjustments, changes in brightness or contrast, etc.) may also cause dysregulation or an increase in behavioral symptoms for patients who have auditory or visual sensitivities.

3. **Technology issues**

   The occurrence of certain basic technology issues is often inevitable over the course of a plan of care. This may include anything ranging from internet or power outage, loss of audio and/or video feed, user error, an unstable or lagging

internet connection, platform or program errors, and lacking a certain peripheral device or equipment needed for the session. Some of these concerns may be effectively prevented by an easily-accessible tech support team. Yet, in some circumstances, technology issues may be further compounded by another barrier: patient comfort with technology and their ability to troubleshoot basic issues that arise.

4. **Comfort with technology**

   Patients and therapists who have difficulty adjusting to new forms of technology might find that this impacts their ability to fully engage in the therapeutic process. Patients may be unable to independently navigate basic tech issues, and similar issues may occur even if they have a parent, caregiver, or e-helper present. This can not only delay the therapy process but, in some cases, entirely prevent it from happening. Again, patients and therapists alike can be reassured by the reliable presence of quality tech support to assist in these instances.

5. **Poor user experience**

   No matter how comfortable patients and providers are with technology, platforms that do not offer a quality user experience will negatively impact the care provided. Therapists and patients should be able to smoothly and easily navigate between various aspects of the platform to find what they need to deliver care in real-time. Following initial set-up instructions or a walk-through from the therapist, patients should continually be able to adjust accessibility settings for the keyboard, audio/video feed, messaging, and more. This also means that there should be a sensible union between the types of technology used. For example, all features ideally should be integrated into one platform or program (audio and video feed, messaging, home exercise program videos or print-outs, etc.). If this is not the case, patients should be able to reference basic, clear instructions to find the features wherever they are located.

6. **Lack of in-home or on-site support**

   Patients may need assistance in a variety of areas throughout the treatment process, which not only improves the patient experience but also enhances the effectiveness of the care provided. Therapists may request outside help for patients while they complete certain exercises or activities, or maybe they need someone available to resolve basic tech issues that may arise. This may be a more crucial aspect of the telehealth process for certain populations, including

pediatric patients or those with cognitive impairments, behavioral concerns, or poor motivation. No matter what the reason, therapists may request that someone be constantly present or "on-call" if the need arises.

The Coaching Model & Telehealth [35,36,37,38,39]

In certain instances, occupational therapy treatment can require hands-on work such as manipulating joints, massaging muscles, guiding body parts, and providing tactile cueing. For this reason, patients and therapists often have certain expectations for a session completed using telehealth. However, this type of modality only makes up a small portion of a therapist's intervention, even in notoriously more physical practice areas such as hand therapy and neuro rehab. This means that occupational therapists who offer sessions via telehealth should get accustomed to one of the most foundational models of therapy: coaching.

A big part of a therapist's job is serving as a health educator by:

- Instructing patients how to form healthy habits and routines (this can span the areas of diet, exercise, medication management, stress reduction, productive leisure, and more)
- Teaching self-management strategies to prevent exacerbations, additional injury, and the worsening of their condition (including good body mechanics, symptom management, compensatory techniques, and improved functional performance across all areas of their life)
- Educating patients on specific recommendations as part of their home exercise program

The core of our profession is informing patients on the basics of their condition (which may or may not have been done by other healthcare professionals) and how they can better manage their symptoms while building or rebuilding skills. This is the main way that we ensure skill carryover and foster a greater sense of independence and autonomy in the people we treat. The coaching model relies on this education, given not only to patients, but also to caregivers, parents, and other loved ones involved in their care.

The main goals of the coaching model include:

- Utilizing opportunities for reflection and critical thinking
- Fostering teamwork and role delineation to achieve goals

- Caregiver or parent involvement in identifying patient needs and preferences as well as setting goals
- Improving caregiver and patient confidence in the efficacy and feasibility of sessions
- Use of the most natural environment (the home) as a means of education on safety and optimal engagement

Within certain practice settings, like early intervention and pediatrics, the coaching model is already a pivotal aspect of the treatment process. The American Academy of Pediatrics has even developed a specific process that they deem best practice in implementing parent coaching. The COACH model emphasizes contact, optimize, act, and check-in as the main steps to follow for effective parent coaching:

Contact

1. Orienting patient and caregiver to the telehealth process
2. Identifying each person's role during sessions
3. Encouraging all parties to ask questions as they arise
4. Verbalizing each party's goal for treatment

Optimize

1. Set up the room in an optimal way that allows therapy to run smoothly
    a. Is there enough space in the room to stretch and do exercise if needed?
    b. Are there large items that may be knocked over accidentally?
    c. Is there privacy and quiet from the rest of the living spaces?
    d. Can the caregiver see the patient at all times in the room?
    e. Is the space free of distracting stimuli? (e.g. TV, radio, noise from outdoors, conversations from other rooms, favorite toys nearby, etc.)
    f. Is the camera positioned far enough from a window and other light sources to prevent a glare on the screen?
    g. Is your camera on the desktop computer, laptop, phone, or tablet?

i. If you are using the desktop, can you easily adjust it to get a better view as you move?

ii. If you are using a tablet or phone, do you have a place where it can be propped up securely?

h. Do you plan to use earbuds/headphones or do you have them available if needed?

i. If you are using a tablet or phone, consider wireless earbuds/headphones so they can move independent of the device

ii. If you are using a desktop, wired earbuds/headphones can be used but be aware of moving with them in your ears

i. Do you have therapy materials ready?

i. You may need a whiteboard, paper, pencils, markers, balls, clips, putty, therapy bands, free weights, assistive devices, or other items you use during self-care tasks

Act

1. Do the caregiver and/or the patient have insight into the performance deficit(s)?
2. Is the caregiver and/or patient able to identify appropriate and realistic goals to remedy this deficit(s)?
3. Is the caregiver and/or patient able to discuss a plan for addressing the concern(s) at hand?

Check-In

1. Is the caregiver and/or patient following the plan according to your instructions?
    a. If so, what has the result been?
2. Is each person staying within the roles identified at the beginning of treatment?
3. How is the cooperation and collaboration between the caregiver and patient?
4. What areas can be improved upon?

A similar pediatric model has developed within the field, called occupation-based coaching, which entails the use of authentic contexts, caregiver responsiveness and attachment, joint plans, therapist feedback and caregiver insight, and family routines and activities.

While the majority of research is dated 10-15 years ago, there has been the most evidence for the efficacy of the coaching model when used with patients who have Autism Spectrum Disorder (ASD). Parents who participated in therapy using this model have reported high levels of satisfaction, effectiveness, and child participation (including frequency of play, parent goals, and diversity of skills developed).

A key aspect to effective coaching for any population is to prepare with the caregiver before the session by educating them. Preparation is vital to success in the therapy process, so it is optimal to carry this through the visit and encourage open, clear communication on both sides. Therapists find themselves being most effective as observers during the session. They should take the time to view the details, areas for growth, and ask thought-provoking questions. Therapists should also divide their observation time equally between the caregiver and the patient. It is important that the patient learns and builds skills as a result of this process, but this can only happen if the caregiver understands how to best facilitate this both inside and outside of therapy. Providers can also tap into their therapeutic use of self by entering the encouraging mode of therapy. This will encourage caregivers to partake in observation while demonstrating patience, and collaborating with their loved one.

Populations that Benefit

While there are varying levels of evidence related to telehealth, it is generally accepted that most all populations can benefit from some form of telehealth intervention. Telehealth-assisted sessions are a great way to assist individuals who have:

- Severely impaired mobility or are homebound due to a physical or psychiatric condition
- Cognitive limitations (but they have a caregiver or family member present to assist them)
- Limited transportation
- A desire for general wellness services such as disease prevention and ergonomics
- Caregivers who require specialized training related to their loved one's condition

- A need for education on the use of specific assistive devices or adaptive equipment
- Specific scheduling needs or limited availability

Many patients are great candidates for the use of telehealth, however, this mode of service delivery is not for everyone. Individuals who may not be a good fit for telehealth occupational therapy include those who:

- Present with complex medical needs that require frequent management and check-in
- Have multiple sensory impairments, including vision, hearing, and cognition
- Need a high level of physical guidance and tactile cueing for safety
- Must participate in highly specific procedures or standardized assessments that cannot be effectively carried out remotely

Even practice areas such as hand therapy, which may require manipulation and soft tissue massage, can be provided mostly via telehealth. Therapists can provide exercises with modified tools and equipment as well as adapted stretches, education, and recommendations. As with many telehealth cases, therapists may use their clinical judgment to determine that certain patients may benefit from a combination of virtual and in-person visits. Depending on the scenario, in-person care may be periodically warranted to implement modalities like ultrasound and electrical stimulation, perform certain standardized assessments, or offer soft tissue massage for certain cases where modified techniques will not be as effective.

Attentional Needs [40,41]

As a provider, it is not uncommon to work with patients who lack the motivation or focus to independently engage in therapy. Attentional issues can often be worsened by the use of telehealth. Recent research shows that 73% of men and 39% of women admitted to multitasking or focusing on outside activities during telehealth sessions. Attending telehealth visits can be taxing, especially for individuals who spend long hours working in front of a computer screen. For individuals who have been away from technology all day due to traveling or having an active job, they may be tempted to check email or catch up on social media during their sessions.

This can also be an issue for patients with cognitive disabilities, whose lack of focus may be attributed to an injury, trauma, or sensory changes such as poor hearing or vision. Younger patients can have similar sensory issues, restlessness, and poor activity tolerance related to fine motor work, writing, or other seated activities. Therapists can use a variety of techniques to address these attentional issues while increasing engagement and improving the effectiveness of sessions:

- Incorporating a thoughtful mix of gross motor and fine motor activities to improve alertness and overall engagement
    - By staggering activities, patients will be forced to focus more in order to keep up with the changing details and demands of each activity, like going from sitting to standing.
- Set and stick to a schedule
    - For some patients this may mean using a visual schedule to keep their attention and outline expectations
    - Others may benefit from something as simple as stating the activities you have planned for that day
- Offer specific and positive reinforcement along the way
    - Customize this encouragement to your patient's needs and preferences
    - For pediatric patients, maybe this means playing a special game or a short song they love at the end of a good session
    - Some kids may benefit from verbal encouragement such as "Good job holding your pencil the right way!," "I'm proud of how great you are focusing on your worksheet," or "You're on the right track, but let's try (insert area for improvement) to make it a little easier for you."
    - For adults, this may come in the form of acknowledging their progress and hard work so far by saying, "I can see how much stronger you're getting. Remember when you weren't able to (insert previous deficit) when we first started working together?"
    - This serves many purposes, including giving your patient feedback throughout the plan of care, improving their awareness, and enhancing the patient-therapist relationship

- Be creative to improve the patient experience
    - If patients are in pain, discouraged, and participating in standard, cookie-cutter activities, they won't feel inspired or engaged enough to come to therapy and give their best effort
    - Keep your treatments fun and focused on your patients needs and interests
    - Don't forget to incorporate one of the most valuable tools that a telehealth occupational therapist has: the patient's natural context -- their home. You can use household materials, favorite toys, electronic gadgets, assistive equipment/devices, and much more that is readily available within the patient's living space.
- Acknowledge and validate emotions
    - Patients may be slow to warm up if they have never used telehealth, so be sure that they are getting an authentic experience by building rapport and making them feel as comfortable as possible.
    - Enter the encouraging mode by reassuring, motivating, understanding, and adapting. Be empathetic about their current health situation and about that they may be cautious or hesitant at the start.
- Anticipate some sort of technology issue
    - As therapists, you always need to think two and three steps ahead. It is in our nature to be flexible and adaptive. This is especially important when technology is a part of treatment.
    - Be prepared in the event of an inevitable situation like poor internet connection or a power outage. In some cases, you have the option of completing the remainder of your visit over the phone.
    - If you need to cancel a visit due to technical difficulties, don't leave your patient without anything. Give them some instructions so they can complete the activities you had planned on their own, or tell them to complete a few extra repetitions of their home exercises. Better yet, think of an outing where they can get some therapy work done in a new setting, like on a nature walk or elsewhere in the community.

- Act as if you would during in-person sessions
    - This helps patients feel more assured while setting the precedence for a professional visit. This entails setting up a private and distraction-free office setting (ideally one with a clean background such as a blank wall), dressing professionally just as you would in the clinic, making eye contact rather than directing your gaze toward the self view, having necessary materials within arm's reach, and not taking notes while the patient is talking.
    - Another important aspect of professionalism that should not fall by the wayside during telehealth visits is verbal and non-verbal communication, Be sure that you are smiling, offering head nods and affirmations while they are speaking, and asking clarifying questions when appropriate.
- Recognize that the change in setting may be off-putting to patients
    - If you are comfortable with it, offer patients a quick tour of your office. During in-person sessions, patients usually have a view of the whole therapy gym or hallway. Some patients may benefit from getting a glance at where you are working from to feel more oriented.
- If patients are feeling truly dysregulated with the change, guide them through basic grounding activities
    - Invite patients to tune in with their bodies and minds to get a better handle on the situation. Ask them to practice some mindfulness and describe how their clothes feel on their skin, what they can see out their window, and what smells are around them right now. Some patients may benefit from deep breathing exercises, and others may like to notice and verbalize three details about their surroundings.
    - This dysregulation may extend to being able to see themselves on camera. If you think this may be the case, instruct your patients how to turn off self-view or temporarily obstruct the view of their webcam (if clinically appropriate). Some portions of telehealth sessions may even be completed over the phone if this is the best option.
- Check in with your patients consistently

- Ask them how they are feeling with the process and what you can do to make it better. There may be some additions (or aspects that are taken away) that you may not have picked up on.

Section 4: Available Evidence

Despite telehealth still being a relatively new practice area, it is important that there is research surrounding its use with a variety of populations, both those that are well-known and less common. As with all interventions and modes of delivery, having a good scientific basis for the treatment we provide leads to improved outcomes, a better recognition of the occupational therapy field, increased insurance reimbursement, and more continuity of care. A strong basis of evidence also helps therapists utilize treatments that are both reliable and valid, meaning they will produce verifiable and consistent results in patients.

You now know that there are certain diagnoses, symptomatology, and clinical scenarios where telehealth may be more appropriate than in-person treatment and vice versa. Most recently there is the greatest amount of evidence surrounding the use of telehealth in a pediatric population, specifically for children with Autism Spectrum Disorder (ASD). This may be due in part to there being extensive research on the use of the coaching model for children with ASD and members of their family. If you remember, coaching is a prevailing model used within telehealth treatment due to its focus on caregiver and family training. Caregivers and patients alike benefit from the coaching model as it helps facilitate their loved one's independence both during and outside of therapy sessions. For this reason, telehealth for individuals with ASD currently has the most documented positive outcomes.

Pediatrics [42, 43, 44, 45, 46, 47]

One recent study analyzed the use of telehealth services for occupational performance coaching with parents and their children ages 2-6 who have ASD. When compared with in-person sessions of the same nature, families and therapists both reported cost savings and improved effectiveness of the care provided. Additionally, post-testing assessments showed that children's participation significantly increased across several domains. Children also demonstrated marked gains in specific goal areas that were identified by parents at the start of care.

Different research in the form of a case study focused on the use of gamification within the home for a child with cerebral palsy. The participant independently engaged in

game-based neurorehabilitation for 56 hours over the course of eight weeks. Following this program, evaluation measures show improvements in motor function and activity participation. This also helped identify specific challenges that individuals may experience in the process of implementing telehealth within the home.

Additional research looked into the specific impact of toileting intervention provided via telehealth to children with ASD. A range of treatments were part of the 12-week program that yielded significantly improved toileting behavior and notable gains in the Canadian Occupational Performance Measure (COPM).

Telehealth has also proven effective for children between the ages of 0 and 24 months with no specific diagnoses. Occupational therapists provided information to mothers who sought help via online social forums such as groups, webpages, and message boards for concerns such as self-regulation, parental worry, and routines (specifically feeding- and sleep-related). Over 55% of mothers reported that they received clarification and felt supported through the information they got. Moreover, there was an 89% satisfaction rate and 94% of mothers recommended these social media outlets and content to others in similar situations.

A unique study analyzed traffic within a neonatal intensive care unit (NICU) and aimed to see what services could be effectively replaced with telehealth visits to reduce exposure and conserve patient protective equipment (PPE). The study analyzed all disciplines, including nursing, respiratory therapy, attending and resident medicine, lactation counseling, pharmacy, occupational therapy, physical therapy, nutrition, and social work. Results showed that, within a period of 24 hours, the number of in-person visits across all disciplines was reduced from 21 to 7. Specifically, all visits provided by support professionals (lactation counselors, pharmacists, therapists, nutritionists, and social workers) were able to be done remotely.

Researchers have also assessed the effectiveness and feasibility of telehealth feeding therapy for patients with intellectual and developmental disabilities. Results showed that the services offered a cost reduction along with increased effectiveness as compared to traditional outpatient services.

Physical Disabilities [48, 49, 50, 51, 52, 53]

One study analyzed the effectiveness of a levelling application in measuring active forearm and wrist motion. Figures from the iPhone application were compared with goniometric statistics and repeated one week later. Measurements were found to be

largely equivalent in nature, and this application can be used by individuals to monitor gains at home.

A case study was conducted to determine the impact that an energy conservation program via telehealth had on post-stroke chronic fatigue. After the eight-week program, the participant demonstrated significantly less fatigue as evidenced by improved scores on the Fatigue Impact Scale (FIS) and moderate improvements in occupational performance as documented by the COPM.

Additional research looked at the effectiveness of kinetic sensors in measuring upper body gross motor function. The sample consisted of individuals with a history of stroke and healthy individuals. Results showed that sensors did an equally effective job tracking participant movements as compared to traditional methods of measurement.

Another study focused on individuals who recently had surgery for breast cancer and lived in remote areas. The study involved participants travelling to a hub site, which was an average of 16 miles away from their homes, to receive telehealth services. Firstly, participants reported an overall high level of satisfaction with the sessions. Participants also saw a return to their baseline level of function in an average of 42 days with an average of three sessions completed via telehealth.

The use of telehealth services within a home health model of occupational therapy care was studied. This particular study focused on providing a blend of in-person services and telehealth visits and gauged participant experience after the program. Participants experienced an improvement in occupational performance and satisfaction as well as a more favorable view of telehealth use at the end of their services.

One research study viewed the impact of virtual reality programs on individuals with residual effects from stroke. Results showed that participants were satisfied with the flexible nature of scheduling visits and reported high levels of engagement. Participants also showed functional improvements across several performance areas with a particular emphasis on the ease of equipment use.

Geriatrics [54, 55, 56, 57]

Research looked into the use of video telehealth services with veterans. Despite nearly half of the providers surveyed using telehealth treatments on a regular basis, organizational standards were the main implementation barrier for the remaining therapists. Provider attitude toward telehealth adoption proved to be one of the biggest catalysts for its successful use within this population.

In the home health realm, telehealth occupational therapy has been proven to assist patients in making home modifications on a small scale. More research is needed to determine its effectiveness for larger changes or long-term work, but this is promising for a practice area of occupational therapy that already uses some technology.

Additional research looked at the impact of audio calls to provide reality orientation intervention for community-dwelling individuals with severe dementia. When compared to no treatment, telehealth treatment was significantly more effective at reducing symptoms of cognitive impairment, depression, and difficult behaviors. This intervention also served to reduce caregiver burden. This treatment yielded the best results when also combined with emotional support for the family unit.

Another study viewed the effectiveness of treatments and training surrounding intelligent assistive technology (IAT). It was determined that devices in the categories of monitoring, cognitive orthoses, tracking and tagging, and smart home-based technology were the most effective at lowering the safety risks for individuals with dementia. Despite these results, the study also determined that specific device qualities and features were highly important to the user experience and efficacy.

Mental Health [58, 59, 60, 61, 62]

Research supports the use of telehealth services to assist individuals during the post-jail transition phase. Treatment focused on audio and video calls to assist in community-based therapy surrounding context reintegration. Therapists who used this intervention found they were able to achieve a higher level of personalized treatment than they would through traditional means.

Caregiver wellness is another emerging practice area that telehealth has been found effective in. A six-week study was well-received by participants who felt that the mode of service delivery was both effective in enhancing their learning and fostering improved relationships.

Another unique area where telehealth can assist in occupational therapy intervention is when addressing health literacy. Telehealth was found to be an effective way to both assess and improve health literacy. Therapists can use a range of telehealth devices to assess patients' comfort level with technology, determine areas of growth, and monitor progress with the technology itself. This study also viewed think-aloud methods and various styles of reasoning to help train therapists in the use of ehealth.

A different study focused on the efficacy of telehealth for some of the most traditional populations: those of a minority group who are located in a rural, remote area. The intervention focused on culturally-sensitive intervention for lifestyle redesign and disease prevention. Immediately following intervention, results showed significant improvements in stress levels, systolic blood pressure, activity satisfaction, and social role function. These gains were then maintained long-term for a period of at least 2 months after the study concluded. Qualitative feedback also showed that participants viewed the interventions as having a positive impact on their overall well-being.

Case Studies

Case Study #1

Alanna is a 3-year-old girl living in a rural area of upstate New York. She has just aged out of early intervention services, which she was receiving for adaptive delays, gross motor delays, and limited speech. She is in need of continued occupational therapy, physical therapy, and speech therapy until she enters preschool next year, but there are no local clinics that can provide this intervention. With the help of her babysitter, Alanna engages in telehealth occupational therapy sessions twice per week for 30 minutes to help her learn how to self-feed, put her coat on, zip it up, and develop her fine motor and prewriting skills.

Case Study #2

Antoine is a 9-year-old boy with ADHD who attends fourth grade in a small Wyoming town. Despite there being a few other schools within his district, the nearest one is more than 40 miles away so there are no therapists on-site where he attends. His school has a contract with a telehealth company that provides occupational therapy assessment and treatment as well as some other services such as special education and behavior therapy. Antoine meets with his online therapist once per week for 60 minutes alongside a paraprofessional who helps him log on and get started. Antoine participates in handwriting exercises, visual motor activities, and therapeutic video games to address his performance deficits. The occupational therapist educates Antoine and the paraprofessional on how to structure the environment to facilitate success and sustained attention.

Case Study #3

The rehabilitation department at a children's hospital is using telehealth to help improve their discharged patients' transitions to home and school environments. Through weekly check-ins, therapists meet with the child's family to provide continued education to promote success. Sessions may include outpatient service coordination, training on the use of durable medical equipment, assistive devices, orthoses, or prosthetics, recommendations for reintegration at school, role resumption, adjustment, and family dynamics related to illness or disability.

Case Study #4

A local outpatient clinic is expanding their services to offer a telehealth program for individuals who have sustained mild traumatic brain injuries (TBIs). Intervention is provided once weekly and focuses on compensatory techniques, executive functioning, personal safety, goal-setting, and injury prevention. This is a way for the clinic to ensure the safety of individuals within the community while providing care in a more familiar environment. This has led to an increase in attendance, compliance, and improved patient outcomes. Therapists have also reported that they are more easily developing rapport with patients as a result of therapy in a natural context.

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