

# TELEMEDICINE VERSUS TELEHEALTH

## ■ Introduction

Telemedicine is one of the quickest growing fields inside of medicine. In one form or another, it has been around for generations. However, its popularity has skyrocketed and become a preferred source of seeking medical care. During the COVID-19 crisis throughout 2020, telemedicine was practically the only form of healthcare patients could receive outside of a hospital or drive-through clinic. Synchronized and asynchronous medical visits across the specialties, remote patient monitoring, and other forms of digital care have become a mainstay in the current healthcare climate.

What was once a “backup” form of healthcare suddenly was thrust onto the front burners. Practices were scrambling to stand up a digital platform and continue to care for their patients as well as continue a flow of revenue to keep their doors open. Digital health in all its formats was given special dispensations by the government, payors and organizations in order to help combat COVID.

## **Digital Health, Telemedicine, and Telehealth**

The types of digital health available all allow for a certain factor of the care of the patient to be met. While the modalities may overlap, they each provide their own pros and cons. How they interact and lead to the final digital health platform will

vary from practice to practice. While some may choose to only utilize one aspect, most will choose to use several. Software for personal use devices will continue to become more popular. There is a lot of ground to be covered in the future of these modalities.

### *Digital Health*

Digital health is an umbrella term that incorporates telemedicine, telehealth, and remote patient monitoring. Under this umbrella, the medical services branched out and developed a new, modern modality to care for patients in a dynamic new manner.

### *Telemedicine*

Telemedicine is the practice of medicine via a digital medium by a licensed practitioner. Medical visits completed using this medium allow for an assessment, diagnosis, treatment plans, and referrals to be initiated; an in-person evaluation can follow a telemedical visit. Depending on the state in which the provider is practicing, there may be limitations on the services that can be rendered and the manner in which they can be reimbursed. Certain states also require waivers to perform telemedical services.

This type of encounter can include evaluation and management of diagnostic tests such as laboratory evaluations, imaging results, and consultant reports. Telemedicine can be used for acute care illness and injury as well as monitoring chronic conditions. In situations in which care is being conducted for remote patients and patients who do not have specialized care available to them, telemedicine is an excellent modality to achieve some aspects of specialty care from the patient's home or local doctor's office. During the COVID-19 pandemic the rules and regulations directing telemedicine, especially with regard to Medicare patients, were significantly loosened. How these changes will proceed once the COVID pandemic is over is unknown.

### *Telehealth*

Telehealth is the support services provided by a nonclinical provider, that is, nursing or medical assistance (electronic scheduling, etc.), and is usually seen as a supplement to telemedicine. Telehealth can also include medical education, administrative care, training events, and follow-up evaluations with nurses, dietitians, and physical and occupational therapists. Telehealth also incorporates the ability to provide medical education and offers an ability to provide in-service to providers and staff.

Examples of telehealth include the following:

- Nursing visits for close monitoring of new and chronic conditions
- Pharmacists offering advice about potential medication side effects and interactions
- Dieticians consulting about managing conditions utilizing the best approach to a patient's diet

Dieticians can ask patients to take the camera around their kitchen to show what the patient may think is healthy or demonstrate what type of food scale they use. A physical therapist (PT) or occupational therapist (OT) can see how a patient performs their activities of daily living. The PT or OT can also monitor the patient's gait and note any risks for fall or other factors of injury around the house. A pharmacist can see how a patient store and take their medication; for instance, are the medications organized or scattered? The pharmacist can also note if a patient is storing their medication correctly, for instance insulin stored out of the refrigerator. These services are traditionally nonreimbursable. However, during the COVID-19 pandemic there was a reduction in their restrictions that allowed these services to become reimbursable; this, however, varied from state to state.

### *Remote Patient Monitoring*

Remote patient monitoring is the practice of allowing patients to monitor themselves while digitally transmitting that information to a provider or other members of the care team. While this is usually incorporated into telehealth services, it is fast becoming a field of its own. This section of the digital healthcare system allows for patients to be monitored in a condition most comfortable to them. Remote patient monitoring does not necessarily mean that patients or families must purchase new equipment, as most people have smartphones, smartwatches, and other pieces of hardware in their homes that can collect and transmit data to their providers. A multitude of applications on smartphones can monitor female health, track steps and workouts, and monitor dietary and medication compliance.

Remote patient monitoring seems to be among the last of the digital health buildup. This is most likely due to the need for extra equipment. However, the use of commercially available equipment such as smartwatches and other commercially available wearable technology has helped increase the popularity of this type of digital health. Application-based pulse oximeters proved to be an invaluable piece of technology during the beginning of the COVID-19 pandemic.

### **Overview of Challenges in Telemedicine**

As an emerging form of care, telemedicine contains inherent challenges that are hard to overcome, such as clinical inability to do certain types of evaluations, billing concerns, and technological lack of proper infrastructure to complete an exam. Provider and patient hesitance to adopt a digital medical platform is also a factor. There are solutions in the works for all these concerns. However, legislation and business policies take time to change and become part of main care. Throughout 2020, it was clearly demonstrated that this new form of healthcare is dependable and available and that there is a niche for this type of service.

A confusing factor in telemedicine services is laws and regulations. These are controlled by federal, state, and institutional policies. Who can bill for services, who can prescribe, and what can be prescribed? Different states also have parity laws that determine if the insurance must pay for services rendered during a telemedical encounter. The COVID-19 pandemic changed a lot of the rules and regulations regarding digital health. Care between the states was allowed, Controlled Dangerous Substances (CDS) were allowed to be prescribed telephonically and electronically in states where this wasn't usually allowed. It seemed that there was a change to the regulations every time these data were solicited. Since the dust seems to have settled, the overall changes appear positive and embrace the usage of digital technology for healthcare needs.

### **Overview of Benefits of Telemedicine**

The Centers for Disease Control and Prevention (CDC) offers the suggestion that telemedicine and telehealth will reduce healthcare costs and increase access to care, especially in underserved populations in rural areas (CDC, 2016). Telemedical visits in rural populations grew from 7,000 in 2004 to over 100,000 by 2013 (CDC, 2016).

Telehealth has grown greatly over the last 20 years. Mental health telemedicine alone has increased 45% over the last decade (Balestra, 2017). The CDC projects that state telemedicine and telehealth will be a \$30 billion portion of healthcare.

The budding platform of telemedicine has the potential to improve communications not only between patients and providers but also among the providers and the interdisciplinary care team. The ability to provide medical education and share knowledge and techniques is also an important aspect of care (National Quality Forum, 2017).

Digital medicine has infiltrated every aspect of our lives. Smart devices check our heart rate, monitor an electrocardiogram, detect hydration level, monitor exercise patterns, and

help women monitor menstruation and fertility. You can't help but see advertisements for telemedical services by large hospital chains and internet start-up companies on road signs, on social media, and in smartphone-application stores. Television commercials are dedicated to advertising the ease of obtaining "embarrassing" medications such as erectile dysfunction therapies, treatments for balding, and sexually transmitted disease monitoring.

Approaches to proper assessment techniques, visit etiquette, and how to assess your digital health approach are important aspects of digital health care. The ability to reach the masses and assess them in their comfort zone allows for the best quality care. Digital health also offers the benefits of being available on the timeline of the patient, and if the patient does not have insurance, this usually occurs at a lower price point.

There are many great resources to utilize during the discussion, implementation, and application of a digital health platform. The Center for Medicare and Medicaid Services, American Telemedicine Association, the CDC and the American Medical Association are just a few that offer great insights, documents, and playbooks to build and model platforms for success. The National Quality Forum also put forth a very succinct and practical guide for creating and supporting a digital health platform. The World Health Organization and the various academies of specialties and state board of medicine or nursing all offer opinions on the efficacy and need for digital health platforms. An organization must analyze the base information from these resources and formulate how to implement it in the organization. This is not an easy task, but to use the road already paved by others and build upon it eases the burden.

This book will hopefully answer questions on these topics and aims to enlighten emerging providers, administrators, and payors to the benefits of telemedicine and telehealth. With knowledge comes power and the ability to effect change. The

future of telemedicine is in the hands of those who are rendering services. Technology can and always will catch up to the demand. The legislation and business need to be motivated to change. This will only come with continued proof that this method of practicing medicine is cost-effective with high patient and provider satisfaction.

## **History of Telemedicine**

When the first telegraph was sent, we entered a new era in our society, one in which one side of the map could reach the other in a period of time previously unheard of. It was not long before healthcare providers used this ability for the medical needs of a population. Increases in the speed of care and the ability to obtain care from a distance all improve the overall health of society. What was telemedicine in times past is no longer considered such. However, the improvements and advancements that have occurred since have allowed this field of medicine to flourish.

Once more modern technology became available, the telephone was utilized to contact help, seek distant medical care, and increase the distance that one could reach the public. The ability to seek care over the telephone or summon a doctor without leaving the house had great advantages. In a time when most communities were served by a family doctor who performed all healthcare duties, having the ability to reach out to a specialist or get to a hospital when one or both could be hundreds of miles away could be the difference between life and death.

War has always unfortunately pushed technology and innovation forward. During World War II, medics and corpsmen on the frontlines used radio transmission to seek medical control from doctors stationed at headquarters. The wars in Korea and Vietnam sped up healthcare by increasing the availability of helicopter transport. The increased ability of medics and corpsmen to obtain direction and rapid medical evacuation from the

battlefield has also proved to save a great many lives. Medical professionals on the front lines of battle could consult via radio and now with audio and video communications with a dedicated specialist to increase the survivability of our soldiers, sailors, marines, and airmen.

During the 1960s, space programs, based mostly in the USSR and the United States, had the ability to transmit the telemetry data of the astronauts (cosmonauts for the Soviets) back to home base. There was usually at least one physician on-site at mission control to monitor vital signs and assess any medical needs that could arise.

More recent history demonstrates a clear increase in the use of digital services. With the heightened performance of audio and video services via webcams, smartphones with front-facing cameras, and high-speed internet, digital health as we know it today is more widely available than ever. The last few years, with their corresponding increase in technology, have allowed the world of digital health to grow exponentially.

## ■ References

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