A History of the Increasing Role of Telehealth in Family Medicine

Muhammad Junaid Anwar, MD

PGY 2-, Family Medicine

Texas Tech University of Health Sciences – Permian Basin

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Introduction

In this day and age, a doctor's appointment can be less work than filling up the gas. That is because today, thanks to telemedicine, patients can attend medical appointments wherever they are, including at home or work. Patients with weakened states, such as those with diseases like fibromyalgia, migraines, and other fatiguing ailments, can seek care without leaving the comfort of their own homes. Simultaneously, healthcare providers can safely evaluate patients with infectious conditions like the flu or Covid-19 from afar, ensuring safety for the patient, provider, and others in the healthcare facility. Telemedicine is the future of healthcare, and the Covid-19 pandemic catalyzed that growth. However, for all the benefits, there is much to learn about telemedicine to seamlessly integrate it into the healthcare system.

The practice of using technology to provide clinical healthcare remotely is known as telemedicine.[1] Although the terms are frequently used interchangeably, telehealth refers to a broader range of technologically enabled healthcare services, such as nonclinical health education, medication support, nursing, and pharmacy services, among others.[2] Telecare refers to health-related technology that users access from outside of clinics; examples include fitness and health applications, sensors, tools for tracking exercise, digital medication reminders, early

warning and detection systems, and related goods.[3] The American Academy of Family

Physicians (AAFP) defines telemedicine as including remote patient monitoring, diagnostic

imaging, and virtual office visits. The definition also encompasses telehealth services like email

and phone conversations.[4] Family doctors have a broad range of practice, which makes them

well-suited to use technology to improve primary care. In light of this, the American Academy of

Family Physicians (AAFP) urges the US government to define telemedicine and telehealth as

broadly as possible in pertinent legislation.[5]

The History

The use of smoke signals to alert neighboring towns to a plague outbreak during the

Middle Ages and the telephone as a means of medical consultation among doctors in the late

1800s are just two examples of the centuries-long history of telehealth.[6] In 1959, the University

of Nebraska reported that neurological examinations were transmitted across campus for

instructional purposes via interactive video communications.1. Wireless transmission of X-ray

images, ECGs, and cardiac monitoring devices was used in the 1960s for specialist

consultations.[7] Emergency responders used radios in 1967 to communicate patient information to

emergency physicians on the scene.[8]

NASA furthered the advancement of telemedicine by utilizing monitoring software to

track the health of animals on space missions, assess the viability of human survival in space,

and subsequently monitor the astronauts' health in real-time. NASA collaborated on a project

called STARPAHC (Space Technology Applied to Rural Papago Advanced Health Care), which

also offered medical care to the Papago Indians on a reservation in Arizona until the late 1970s,

to test and improve the remote-monitoring technology from satellite-based telemedicine.[9] Later,

this technology was used to lessen the challenges of traveling for healthcare by granting access

to sizeable rural areas. NASA's Applications Technology Satellite (ATS-1) started successfully offering telehealth in Alaska in 1972, and over the following few years, the service was expanded. Not long after, other hospitals and colleges did the same.[10, 7]

Telecommunications became more widely available, and telehealth became more reasonably priced in the 1990s. In contrast to the isolated project-based systems of previous decades, this decade saw the establishment of expansive hub-and-spoke networks, which marked a significant departure from the early days of telehealth. Afterward, these initiatives connected smaller patient locations with bigger healthcare institutions. The 1990s saw several government-funded programs run by academically grounded health centers to increase patient access and health education, particularly in rural areas. Even though the equipment for videoconferencing systems upgraded with medical grade optics was less expensive than in the 1970s and 1980s, it could still cost well over $100,000. Thus, grants were frequently needed for telemedicine programs, and these grants were typically given to enhance healthcare in rural areas.[11] Following Florida, which was the pioneer in the use of telemedicine in prisons, several other states also used telehealth in their correctional facilities. Correctional organizations still use telemedicine today because it reduces the risk to communities and guards, as well as the costs associated with travel and security.[12]

The state of telehealth services was greatly enhanced between 2000 and 2010. Almost all outpatient clinical services were offered as a telehealth option by the decade's end. With its increased patient satisfaction and decreased hospital stays, the VA paved the way for the use of telehealth in chronic disease and home care, and other agencies looked to it as an example of successful telehealth.[13] Between 2010 and 2020, telehealth gained widespread recognition as a treatment modality, during which time the internet surpassed physical marketplaces in terms of

the number of people using it for banking, shopping, and socializing. While telehealth services reduced costs and kept patient care as close to traditional as possible, they also evolved to take advantage of the internet's speed and advancement. System fine-tuning enabled a shift to more precise techniques for taking medical histories and examining patients, which decreased the possibility of information and communication gaps between patients and providers.[14]

Telehealth and Covid

The pandemic's worsening in March 2020, along with the lockdowns and recommended social distancing measures, sparked telemedicine's growth. Congress passed the Coronavirus Preparedness and Response Supplemental Appropriations Act on March 6, 2020, which permit healthcare providers to bill Medicare for virtual visits.[15] The increase in Medicare coverage not only made it possible for doctors to treat patients virtually, but it also hindered the spread of Covid-19 among patients and medical personnel. Since the start of the Covid-19 pandemic, many insurance companies have expanded the coverage of telehealth and telemedicine services in addition to Medicare; however, regulations are still changing and may not apply to all cases. Medicare and other companies pay for telehealth visits in the same way as in-person visits. Some telehealth services are covered by Blue Cross Blue Shield, United Healthcare, Cigna, Aetna, and Humana; however, the exact percentage of coverage varies depending on the plan.[16]

Before Covid, telemedicine was a way to boost productivity; however, after the outbreak, it became essential to maintain the majority of clinics, and a dearth of telemedicine services became harmful to both patients and providers. In many medical specialties, particularly family medicine, telehealth continued to be a reliable and efficient method of treatment after the pandemic was contained and the majority of Americans had received vaccinations. It does not make sense to go back to the pre-COVID telehealth regulations at this time because it would

further disrupt the care pathway that has been in place for thousands of patients since March 2020. Most of the time, in-person care is still preferred; however, by the end of 2021, telehealth claims had increased from 0.1% in 2019 to 5%. By 2020, there were twice as many doctors practicing telemedicine (20% vs 40%). Primary care doctors used telehealth at a rate of 46.2% during the pandemic, up from 5.3% before it, and more than 70% plan to continue using it after it is over. In a survey, nearly 75% of Americans stated they would be open to trying virtual care.[17]

These days, telehealth is developing at an exponential rate and is acknowledged as a valid, frequently chosen way to deliver healthcare. The new generation of patients and healthcare professionals was raised in a digital age, and they do not see much difference between virtual and live communication.[7] When care standards are met, and services are reasonable, necessary, safe, and effective, the American Academy of Family Physicians (AAFP) supports telehealth and views it as an appropriate and effective format for providing care.[18]

Pros and Cons

While there are many unanswered questions, some well-established advantages of telehealth include ease of use for patients with physical disabilities, improved communication between patients and physicians, increased access to specialized care, prompt interventions, shorter wait times, and decreased expenses related to travel, missed work, or childcare. In addition to lowering the risk of contracting an infectious disease, telehealth enables medical professionals to monitor patients in their homes. It reduces the need for ER visits and saves time and money for both patients and providers. These advantages work in concert to produce even better health outcomes, particularly when telehealth is used in conjunction with ongoing care. In addition, doctors benefit from lower costs associated with lost revenue due to no-show patients,

increased patient capacity that results in higher revenue, and a decreased risk of burnout because they can work from home or see urgent cases when they're not in the office.[19]

Telehealth is not without its drawbacks, just like any new technology. Among the disadvantages is the potential for diagnostic error stemming from the need for physician-performed lab work, imaging, and physical exams. Another issue is the security of electronically transmitted personal health data. Additionally, even though insurance companies are paying more and more for telehealth visits, there are still some services that come with unforeseen out-of-pocket expenses.[20]

After analyzing benefits and drawbacks and consulting research, it is finally agreed upon that telehealth is not less effective than in-person care. This is particularly true for the majority of primary care visits, where the management of conditions like uncomplicated upper respiratory tract infections, urinary tract infections, low back pain, initial dermatologic concerns (ask using high-definition imaging), and chronic disease management may be determined by history and visual examination alone. Physicians who manage established diagnoses of chronic diseases, including diabetes and hypertension, and conditions related to specialized fields like endocrinology, gastroenterology, rheumatology, nephrology, cardiology, and psychiatry report using telemedicine most effectively. Furthermore, some doctors would be better off not using telehealth.[21]

Challenges

Even though telehealth shows great promise, obstacles must be removed to maximize its potential advantages. These obstacles include the high cost of equipment, inadequate insurance coverage, the lack of technological training for practicing physicians, and a lack of equipment usage expertise. Nearly half of the family doctors questioned stated that they could not provide

long-distance medical care due to the expense of telehealth equipment and liability concerns. Another obstacle is state and federal laws that restrict the services that providers can provide, and a lack of knowledge about the potential need for more telehealth slows down the approval process. Patients' limited access to devices and the internet, telehealth for those with vision or hearing impairments, low digital literacy, and limited English proficiency are some of the obstacles they face. State and federal policies seek to eliminate the obstacles that stand in the way of a smoothly operating healthcare system powered by technology. The requirement to go through the privilege process at every healthcare organization for which they hope to provide services is one of the obstacles telemedicine providers face. Reimbursement policy concerns, which have historically been one of the primary obstacles to the development of telemedicine, have also advanced dramatically. The country's telecommunications infrastructure is also getting better; virtually everywhere in the US, one can get Internet access at a minimum of 10 Mbps.[20, 7]

Areas for Improvement

Beyond the obstacles above, telemedicine still has room for improvement. One approach involves educating patients about how to use the platform by providing information about the necessary technology ahead of time, providing resources for patients who are deaf or hard of hearing, sizing text larger for elderly patients, and providing quick and simple troubleshooting for the platforms in use. More training for aspiring providers would be beneficial in the future. Leading the way in developing a national telemedicine curriculum are the Society of Teachers of Family Medicine and the Association of American Medical Colleges.[22] The patient's experience with telehealth can be enhanced by teaching them how to add online appointments to their calendars, send reminders, ask them to test out the camera and microphone on their device beforehand, use a strong internet connection, charge their device, conduct their appointment in a

quiet, well-lit area, position themselves correctly, and place their device on a stable surface. Patients should also be advised to bring a list of questions or concerns and to attend appointments in private rather than in public, where their privacy may be compromised.[23, 24]

The American Academy of Family Physicians (AAFP) urges states to reduce the onerous requirements associated with physician licensing for telemedicine and suggests loosening licensing procedures to enable physicians to offer telemedicine services in other states. The American Academy of Family Physicians (AAFP) further states that patients should be permitted to continue receiving care from their primary care physician if they are traveling to a different state and have a licensed physician in the state where they typically receive care.[4]

Conclusion

In conclusion, telemedicine is a good thing that has been consistently improved and refined over the last few decades. That said, the sudden shift of so much healthcare to telehealth during the Covid-19 pandemic remains a difficult adjustment for many, including providers and patients. One thing that need not be a barrier to its advancement is concerns about the validity of telemedicine as a treatment method, as professionals and patients have resolved it to be an ample form of healthcare delivery.

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