

State Notes

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Telehealth: How Communications Technology Is Changing the Provision of Health Care **By Stephen Jackson, Legislative Analyst**

Introduction

Throughout the last three decades, the use of telecommunications and digital technology in health care has become increasingly common. This practice, known as telehealth, encompasses a wide array of services and enables providers to manage a patient's health and well-being remotely through the use of communications technology. This article will provide an overview of the history of telehealth and its development into an accepted health care practice. The article also will describe some current applications of telehealth and address some of the barriers that telehealth faces.

What Telehealth Is

The term "telehealth" broadly means the delivery of health care through the use of communications technology. As telehealth has become a more accepted health care practice, the definition has evolved to include a variety of services and health care delivery methods.

Although the term "telemedicine" sometimes is used interchangeably with "telehealth", telemedicine generally describes a narrow range of health care services, such as the delivery of clinical diagnoses and patient monitoring by technology, and is a subset of what is covered by telehealth.¹ "Telehealth" is widely used as an umbrella term that encompasses clinical health care as well as nonclinical services that can be provided across a distance, such as training and education.

The various entities involved in telehealth and telemedicine define the terms in different ways. The Health Resources and Services Administration defines telehealth as "the use of electronic information and telecommunications technologies to support long-distance clinical care, patient and professional health-related education, public health, and health administration".

The Federation of State Medical Boards defines telemedicine as "the practice of medicine using electronic communication, information technology or other means, between a licensee in one location and a patient in another location with or without an intervening health care provider".

According to the American Telemedicine Association, telemedicine is "the use of medical information exchanged from one site to another via electronic communications to improve patients' health status", while the term telehealth "is often used to encompass a broader definition of remote healthcare that does not always involve clinical services". The Association also states, "Videoconferencing, transmission of still images, e-health including patient portals, remote monitoring of vital signs, continuing medical education and nursing call centers are all considered part of telemedicine and telehealth."

Definitions of telehealth also differ at the state level. For example, California defines telehealth as "the mode of delivering health care services and public health via information and

communication technologies to facilitate the diagnosis, consultation, treatment, education, care management, and self-management of a patient's health care while the patient is at the originating site and the health care provider is at a distant site. Telehealth facilitates patient self-management and caregiver support for patients and includes synchronous interactions and asynchronous store and forward transfers".²

Under Michigan law, the definition of telehealth is found in the Public Health Code (as discussed below).

Although multiple definitions exist, telehealth has become a widely accepted health care practice throughout the United States.

A Brief History of the Development of Telehealth

One of the earliest documented medical uses of video communication in the United States took place in 1959, when clinicians at the University of Nebraska used a two-way closed-circuit microwave television system to transmit neurological examinations and other medical information across campus to medical students.³ This technology then was examined for use in group therapy, and in 1964, the clinicians were able to establish a telemedicine link with Norfolk State Hospital, 112 miles away, to provide various psychiatric services, education, and training.

Some of the biggest advances in telehealth occurred through the work of the National Aeronautics and Space Administration (NASA). These developments first arose out of concerns about how space would affect the physical conditions of astronauts and the need to monitor their physical and mental status during missions. Astronauts' suits were designed to contain devices that would continuously check and report the astronauts' physiological conditions via communication satellites.⁴ In the 1970s, NASA's developments in telemedicine were applied to rural medicine through the Space Technology Applied to Rural Papago Advanced Health Care program, a satellite-based communications system designed to provide medical services to the remote Tohono O'odham reservation in Arizona.⁵

NASA continued to pioneer telemedicine into the 1980s. Following an earthquake in Mexico City in 1985, NASA made available the Advanced Technology-3 communications satellite to the American Red Cross and the Pan American Health Organization in order to coordinate disaster relief efforts after land-based communications had been disrupted. In 1988, NASA established the Space Bridge, the first international telehealth program, to deliver medical consultation via satellite to earthquake victims in Armenia.

Despite the successes of NASA, all but one telehealth program in the United States was shut down by the mid-1980s, mainly due to the programs' inability to be financially self-sustaining without Federal funding. However, in the early 1990s, the recognition of the need for greater access to medical care in rural areas produced a "telemedicine renaissance" and Federal funding for rural telemedicine projects increased.⁶ Advances in image digitalization and data compression technology allowed for interactive videoconferencing, which meant that telehealth programs could function without high-cost satellites. As a result, the number of telemedicine programs that used interactive videoconferencing grew rapidly throughout the 1990s.

More recently, the rollout of the Affordable Care Act (ACA) has increased interest in telehealth. One of the main policy goals of the ACA was expanding access to health care.⁷ One way to accomplish this was the expansion of state Medicaid programs. However, this expansion increased the need for primary care providers, particularly in rural and underserved areas, so it was suggested that the use of telehealth technology and remote monitoring could help address the lack of providers.

Approaches to Telehealth

Telehealth has traditionally been divided into three principal health care applications (also referred to as modalities): real-time (synchronous), store-and-forward, and remote patient monitoring. With the recent advances in cellular and mobile technology, many include mobile health (mHealth) as a fourth modality.

Real-time telehealth involves live two-way interactions between a patient and a health care provider using video technology, and is typically used to consult with, diagnose, and treat a patient. Real-time is commonly used in telepsychiatry, telehomecare, telecardiology, and other remote consultation with health care professionals.⁸

The second modality, store-and-forward, involves the electronic transmission of a patient's medical records to a health care provider (usually a specialist) at another location. The information is used to assist in evaluating the patient's case or to render a service outside of a real-time interaction.

Remote patient monitoring (RPM) involves the collection of patient health and medical information via electronic sensors and monitoring equipment and the transmission of the information to a separate monitoring center where health care professionals can monitor the patient remotely. The information helps hospitals and other medical facilities track recently discharged patients once they return home or are transferred to another care facility. Chronic conditions, such as heart disease, diabetes, and asthma, are best served by RPM.

The newest modality, mHealth, includes online services, mobile applications, and wearable devices that are marketed directly to consumers to track their health and wellness. Many expect this market to expand exponentially, and believe that mobile platforms, such as smartphones and tablets, will play a growing role in telehealth in the near future.⁹

Current Application in Health Care Settings

The need for improved access to health care in rural areas was a major driving force behind the "telemedicine renaissance" in the 1990s. According to the U.S. Census Bureau, approximately 20% of Americans live in rural areas, based on the 2010 census. Rural Americans face many challenges to obtaining medical care, and may experience greater health problems compared with residents of urban areas.

On average, rural Americans tend to be older than urban residents.¹⁰ This means that those in rural areas are more likely to have a greater demand for health care services. Rural

populations also are more likely to have chronic illness compared with people living in urban communities.

Additionally, rural residents tend to have fewer health care providers, and those providers are usually dispersed over large geographic areas. This creates barriers to physical accessibility of medical care and treatment because members of rural populations may have to travel great distances to see a provider in person.

Telehealth services have proven to be successful in expanding access to health care for rural populations because these services can eliminate the need to travel long distances for care. Telepharmacy and telepsychiatry are said to be two of the most effective telehealth services that are offered in rural areas. Telepharmacy allows for "remote drug therapy monitoring, authorization for prescriptions, patient counseling and monitoring patients' compliance with prescriptions".¹¹ Psychiatrists are sparse in rural areas and telepsychiatry allows them, through videoconferencing, to speak with and evaluate patients in need of mental and behavioral health services.

Today, the Veterans' Health Administration (VHA) administers one of the largest home telehealth programs in the country. Started in 2003, the Care Coordination/Home Telehealth (CCHT) program allows the VHA to use remote monitoring and videoconferencing to track the condition of patients with chronic illnesses or those who have been recently discharged from a hospital.¹² In 2012, the CCHT program reached almost 200,000 veterans.¹³ That year, hospital admissions were reported to have decreased by 38% and inpatient bed days decreased by 58%.¹⁴ In 2014, the CCHT program served almost 700,000 veterans, and the VHA reported a 34% reduction in readmissions and a 42% reduction in bed days.¹⁵

Challenges Facing Telehealth

While telehealth has proven to be successful in expanding access to and increasing the quality of health care, one of the biggest concerns involves reimbursement from private and public insurers. As of 2016, 23 states had telehealth "parity" laws, which require private health insurers to cover and reimburse for telehealth services in the same manner as they would for in-person services.¹⁶ However, coverage largely depends on how each state defines telehealth.

Federal programs also differ in their coverage of telehealth services. Medicare covers a range of telecommunications and information technology services used to provide patient access across a distance, but does not reimburse for training or education. This generally limits reimbursement to services provided in rural areas. According to the Centers for Medicare & Medicaid Services, Medicare beneficiaries are eligible for telehealth services only if they are provided at an originating site – a county outside of a Metropolitan Statistical Area or a rural Health Professional Shortage Area, which is determined by the Health Resources and Services Administration.¹⁷

Conversely, Medicaid recognizes the benefits of using telemedicine as a "cost-effective alternative" to the traditional in-person method of providing quality care to its beneficiaries.¹⁸ The Medicaid program defines telemedicine as "two-way, real-time interactive communication between the patient, and the physician or practitioner at the distant site".¹⁹ This means that the

store-and-forward modality would not be covered, but could be used as a method of delivering services. However, these services are reimbursed in some form by certain states.

Medicaid defines "telehealth" as the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision, and information across distance. Although telehealth services do not technically fit the Medicaid definition of "telemedicine", many states reimburse telehealth services under the umbrella "telemedicine" term.²⁰ Because states differ in how they define telehealth in statute or regulation, confusion among health care providers can occur, especially if they are treating patients across state lines.

According to the National Conference of State Legislatures, 48 states and the District of Columbia provide some form of Medicaid reimbursement for telehealth services.

Other factors that present problems for the provision of care through telehealth include medical licensure and hospital credentialing. The lack of consistency in state licensure laws presents a barrier to multistate telehealth programs. Most states require that a physician be licensed in the state where he or she is providing services to a patient.²¹ Some states issue special licenses that allow physicians to provide telehealth services across state lines.²² Recently, many states have joined the Interstate Medical Licensure Compact (IMLC), which provides a voluntary expedited method for physicians to practice in multiple states. (In Michigan, House Bill 4066 would enact the IMLC into law. The bill has been referred to the House Committee on Health Policy.)

Credentialing is the process a practitioner must go through before he or she may provide services in a hospital, in order to ensure that the practitioner possesses the necessary qualifications to provide care to patients. Credentialing often can be a long and expensive process. The Joint Commission on Accreditation of Healthcare Organizations, a hospital accreditation organization, previously permitted "privileging by proxy", which allowed hospitals receiving telehealth services to accept the credentialing and privileges of an originating site (where the provider was located).²³ However, this policy contradicted the Centers for Medicare & Medicaid (CMS) Services's Conditions of Participation. In 2011, CMS issued new rules mirroring the practice of the Joint Commission by allowing hospitals and critical access hospitals to "rely, when granting telemedicine privileges, upon the privileging decisions of a distant-site hospital or telemedicine entity with which they have a written agreement that meets Medicare requirements".²⁴

Telehealth in Michigan

Public Act 359 of 2016 amended Michigan's Public Health Code to establish initial standards for the use of telehealth in medical practice (MCL 333.16283-333.16287). Previously, Michigan law was silent regarding the use of telehealth and other digital technology in the delivery of health care. Legislation was enacted in 2012, however, to prohibit an insurance policy or certificate from requiring "face-to-face contact between a health care professional and a patient for services appropriately provided through telemedicine".



Public Act 359 defines telehealth as "the use of electronic information and telecommunication technologies to support or promote long-distance clinical health care, patient and professional health-related education, public health, or health administration" (MCL 333.16283). The definition states that telehealth may include telemedicine, as defined in the Insurance Code: "the use of an electronic medium to link patients with health care professionals in different locations" (MCL 500.3476).

The Act requires a health care provider to obtain a patient's consent before providing care via telehealth. Additionally, the Act permits the Department of Licensing and Regulatory Affairs to promulgate rules to implement its provisions. However, the Act specifies that it does not require third party reimbursement (e.g., from a health insurer) for medical care rendered through telehealth services. The Act also prohibited a provider from prescribing a controlled substance via telehealth, but Public Act 22 of 2017 rescinded the prohibition and allows a health professional to prescribe a controlled substance via telehealth if he or she is acting within the scope of his or her practice.

Conclusion

Telehealth has proven to be a promising way to improve health care and can provide numerous benefits to individuals. Health care professionals and facilities can use telehealth to increase access to services and improve the quality of care. As technological innovation continues, it is likely that telehealth will expand in scope. Although there are significant concerns regarding reimbursement for telehealth services by insurers, as its application continues to grow, the states and the Federal government are likely to take an active role in developing policies to address these concerns.



ENDNOTES

- ¹ Rita M. Marcoux & F. Randy Vogenberg, "Telehealth: Applications from a Legal and Regulatory Perspective", 41 P&T Health Care & Law, no. 9, 567, 567 (2016).
- ² Cal. Bus. & Prof. Code § 2290.5(a)(6).
- ³ "Telemedicine: A Guide to Assessing Telecommunications for Health Care", p. 36 (Marilyn J. Field ed., National Academies of Sciences 1996).
- ⁴ Gerald-Mark Breen & Jonathan Matusitz, "An Evolutionary Examination of Telemedicine: A Health and Computer-Mediated Communication Perspective", retrieved 7-10-17.
- ⁵ Marlene M. Maheu et al., "E-Health, Telehealth, and Telemedicine: A Guide to Start-Up and Success" 5-8 (1st ed. 2001).
- ⁶ *Id.*
- ⁷ Note 1, at 568.
- ⁸ Note 1, at 567; "The Promise of Telehealth for Hospitals, Health Systems and Their Communities", American Hospital Association 1, 3 (2015).
- ⁹ It is expected that the global market for wearable health devices will increase from \$1.5 billion in 2014 to \$49 billion by 2020. Note 1, at 567; Note 9, at 3.
- ¹⁰ "Rural Public Health: Best Practices and Preventive Models" 13-14 (K. Bryan Smalley & Jacob C. Warren eds., 2014).
- ¹¹ Note 8, "The Promise of Telehealth...", at 4.
- ¹² "Telehealth: The Integration of Telecommunications into Patient/Provider Encounters", retrieved 7-13-17; Joseph Kvedar et al., "Connected Health: A Review of Technologies and Strategies to Improve Patient Care with Telemedicine and Telehealth", 33 Health Affairs, no.2, 194, 196 (2014). Also, note 8, "The Promise...", at 5.
- ¹³ Note 12, "Connected Health...", at 196.
- ¹⁴ *Id.*
- ¹⁵ Note 12; "Telehealth: The Integration...".
- ¹⁶ Note 1, at 568.
- ¹⁷ The telehealth services that Medicare covers are set out in the Social Security Act, 42 U.S.C. 1395m.
- ¹⁸ Medicaid website, "Telemedicine", retrieved 7-14-17.
- ¹⁹ *Id.*
- ²⁰ Note 1, at 568.
- ²¹ Eric Wicklund, *On Telehealth License Portability, Each State Follows its Own Path*, mHealth Intelligence, Jan. 28, 2018.
- ²² Ronald S. Weinstein et al., Telemedicine, Telehealth, and Mobil Health Application That Work: Opportunities and Barriers, 127 Am. J. Med. 3, 183, 185 (2014).
- ²³ Center for Connected Health and Policy: The National Telehealth Policy Resources Center, *Credentialing and Privileging*, retrieved 7-17-17.
- ²⁴ Centers for Medicare & Medicaid Services, Telemedicine Services in Hospitals and Critical Access Hospitals (CAHs), retrieved 7-17-17.