

Telehealth: past, present, and future



From initial assessment to the final charted word, nurses depend on information to make clinically correct decisions and deliver appropriate care. In fact, in their textbook titled *Nursing Informatics and the Foundation of Knowledge*, Dee McGonigle and Kathleen Mastrian assert that nurses are knowledge workers - acquiring, using, engineering, managing and developing information on a daily basis (McGonigle & Mastrian, 2018). Over time, the way nurses gather and use information has changed. With the change in information use and advancements in technology, the way patient care is provided has also changed. The development and implementation of portable electronic devices and web-based communication has brought new attention to a not-so-new concept in health care delivery - telehealth.

The American Telemedicine Association defines telehealth as “ technology-enabled health care management and delivery systems that extend capacity and access” (Telehealth Basics, n. d.). Telehealth is not a new concept. The first electronic medical record transfer occurred in 1948 when radiology images were transmitted 24 miles between two townships in the state of Pennsylvania (History of Telemedicine, 2018). In the late 1950’s the University of Nebraska came up with a system to transfer medical records via phone across campus, and they later partnered with the Nebraska Psychiatry Institute to use closed circuit television for video consultations. In 1968 the University of Miami School of Medicine, working with the local fire department, made it possible to transfer electrocardiogram rhythms from rescue scenes to the Jacksonville Memorial Hospital via radio transmissions (History of Telemedicine, 2018). NASA even got involved as it began developing it’s Integrated Medical and Behavioral Laboratories and

Measurement Systems (IMBLMS) in the late 1960's. As the economy slowed and the financial resources for space program dwindled, a new initiative, the White House Domestic Policy Council, explored ways to boost the economy by using programs already in place. Though NASA was unable to test its IMBLMS in space, they saw this as an opportunity to create an analog on earth. This resulted in the Space Technology Applied to Rural Papago Health Care, or STARPAHC. With a range of diverse partners, NASA took an active role in developing this program which was designed to link patients on the remote Papago reservation in southern Arizona with physicians in Indian Health Service hospitals in larger Arizona cities, using mobile support units. A 1974 NASA report concluded that "STARPAHC was a 'necessary step' in improving health care delivery for both astronauts and ordinary Americans" (A Brief History of NASA's Contributions to Telemedicine, 2013). According to the American Society of Healthcare Risk Management (ASHRM), interest in telehealth waned in the next decade as the cost was high and dependability of equipment was sporadic. It wasn't until the late 1980's and 90's brought improved technology and the Internet, and with it the ability to overcome the former barriers, that interest in telehealth began to really pick up. Since then, the health care system has seen a rapid expansion in the area of telehealth (Telehealth Support, n. d.) and researchers agree the expansion will only continue.

There are many reasons that telehealth makes sense in today's healthcare climate. One proven benefit is in the area of chronic diseases such as diabetes, congestive heart failure, and chronic obstructive pulmonary disease. It is estimated that 50% of American adults have at least one

chronic disease and roughly 75% of total healthcare expenditure goes toward treating those diseases (Mahar, MD , Rosencrance, MD, & Rasmussen, MD, 2018). Typically, treatment for these diseases has been in response to an acute crisis that prompts the patient to make an appointment with their physician. In contrast, by implementing the Telehealth model of managing disease by communication, education, and monitoring, there is often a reduction in the frequency of acute situations. The benefits to the patient include less time spent in travel and waiting rooms, lowered costs associated with medical appointments, and a decrease in ER visits and hospitalizations.

Another benefit associated with the telehealth approach is accessibility. According to the *Cleveland Clinic Journal of Medicine*, approximately 59 million people in America live in areas that are experiencing shortages in primary care providers (Mahar, MD , Rosencrance, MD, & Rasmussen, MD, 2018). Care provided using the technology available allows patients in these areas to access healthcare when they need it. It can also facilitate consultations without the added burden of time and money spent on travel when the services of a specialist are needed but not available in a particular location. Telehealth has brought healthcare services to patients in geographically distant locations and extended the reach and expertise of physicians and specialists around the world, providing safe and efficient care where it is needed (Telehealth Basics, n. d.). Yet another benefit for the patient is accessibility to information. Many healthcare systems have online portals where patient's can access their test results, communicate with their

healthcare providers, and tap into a wealth of education on relevant topics. All from the comfort of their own home!

Not only are there benefits for the patient, nurses can also benefit from this healthcare approach. No longer do they have to be tied to a certain location as telehealth nurses can practice from almost anywhere. In contrast to time spent with patients in an office or hospital setting, which is often limited due to patient load, intrusions and distractions, due to the nature of telemedicine, nurses are not juggling the needs of several patients at once, but can spend uninterrupted, scheduled time with each patient. This gives the nurse time to focus on the patient and provide the specific support or education needed for their situation. (Nationwide Nursing Shortage Eased with Telehealth Services, n. d.)

The services provided by telehealth are varied, but usually fall into one of the following categories: synchronous or asynchronous. Synchronous encounters are two-way interactions between a provider and patient that occur in real-time via an electronic device that has a camera. On the other hand, asynchronous encounters are not live and involve stored information (such as videos, images, and other data) which is then viewed by the provider at a later time. In this case, devices worn by patients may be used to monitor, track and/or store data which is then forwarded to the healthcare provider (Mahar, MD, Rosencrance, MD, & Rasmussen, MD, 2018).

As with all areas of healthcare, telehealth has its own drawbacks. One being the current limited financial reimbursement. Although reimbursement policies are moving in the right direction, the percentage of healthcare

expenditures spent on telehealth services is minute. In fact, the *Cleveland Clinic Journal of Medicine* reports Medicare spending on telehealth services in 2015 was approximately \$14.4 million - "less than 0.01% of total spending on healthcare services" (Mahar, MD, Rosencrance, MD, & Rasmussen, MD, 2018). In the same article we read that currently 31 states and the District of Columbia have legislation requiring private commercial insurance companies to cover the cost for telehealth services. Though a step in the right direction, the lack of uniformity in these laws has led to variable reimbursement rates and many of the self-insured plans and the larger insurers including Medicare and Medicaid are not bound by these mandates.

There are also licensure issues to contend with. Current law limits the ability of healthcare professionals to provide Telehealth services as it requires a healthcare provider to be fully licensed in the state where the patient is physically located. Physicians and nurses in organizations with locations in two or more states are required to obtain and maintain multiple licenses to provide telehealth services. One way to overcome this barrier is through interstate licensure and "a number of states have joined the Interstate Medical Licensure Compact that intends to allow physicians to obtain expedited licenses to practice in multiple states" (Mahar, MD, Rosencrance, MD, & Rasmussen, MD, 2018).

There are also ethical issues that need to be considered. These include patient privacy, data security, the erosion of the patient-physician relationship, and danger of one-size-fits-all implementations. Patients have a legitimate concern when it comes to privacy and data security issues. With remote access comes an increased risk for security breaches. Also, patients

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may not be sure exactly who will be responding to or sharing their electronic information. Implementation of appropriate security measures, obtaining the proper informed consent, and a focus on the development of a positive provider-patient relationship with a goal of equitable access and treatment will go far in allaying patient's fears and gaining the trust of consumers.

(Shivan J. Mehta, 2014; 16(12): 1014-1017)

Telehealth is here to stay. As we move into the future, it will continue to evolve according to the ever-changing needs of the population. One of the biggest issues facing the healthcare community as we look into the future is the shortage of nurses. According to InTouchHealth. com, it is predicted that over a half a million RN's will retire by 2022. With the current shortage of nurses " the U. S. Bureau of Labor Statistics anticipates the need for over one million new RNs to replace them and ease the nursing shortage"

(Nationwide Nursing Shortage Eased with Telehealth Services, n. d.).

Telehealth nursing is already easing the shortage and, according to studies by the American Hospital Association, is seen by patients as a positive development. In the survey, over 70% of patients reported a sufficient level of comfort in communicating with their healthcare providers through email, text, and/or video (Nationwide Nursing Shortage Eased with Telehealth Services, n. d.).

As telehealth services become more accepted, the future implications for the healthcare system are positive. As chronic disease management becomes more efficient and successful, the number of ER visits and hospitalizations should decrease, lowering the associated cost of healthcare and decreasing demand on resources. Nurses currently provide telehealth services in the

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home health setting. It is safe to say that demand will continue to increase and will provide new opportunities for nurses to play key roles in care management (McGonigle & Mastrian, 2018).

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