



Telehealth and it's Expanding Role in Healthcare

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Telehealth is defined as the use of digital information and communication technologies that enables patients to access health care services remotely, while managing their health care through computers and mobile devices.¹ Telehealth technologies and services have recently become an integral component of health care. These technologies and services have a variety of purposes for a wide range of health professions. Some examples of these services include off-site video consultations, wellness interventions, and utilizing mobile devices in an effort to establish efficient communication between health care providers and their patients. These services have provided an effective way for patients to have access to health care, manage their own health care, and for pharmacists to monitor their patients more efficiently. The Department of Health and Human Services estimates that more than 60% of all health care institutions and 40-50% of hospitals in the United States currently use some form of telehealth technology.² From 2012 to 2013, the telehealth market grew by 60%.³ The telehealth market is expanding rapidly, and growth will likely continue as technology develops and further research is conducted on utilization of these services.

Low reimbursement rates have served as the main limitation of Telehealth's expanding role.³ However, private insurers have begun to provide reimbursement for telehealth services.² Laws in 31 states require private commercial health insurers to provide equal coverage for telehealth and in-person services. Subsequently, the lack of uniformity of specific laws has resulted in an overall variation of reimbursements rates.⁴ Currently, Medicaid has no restrictions for state

coverage of telehealth services. All states currently cover teleradiology, 49 states cover telemental health, and 36 cover multiple home-based telehealth services.² Medicare has been more restrictive than Medicaid and private insurers, reimbursing only those beneficiaries with a rural origination.² In 2015, Medicare spent about \$14.4 million on telehealth services, less than 0.01% of total spending on healthcare.⁴

Due to the novelty of telehealth it is still finding its place in the world of healthcare and there is currently no national standardization beyond the terminology that is used.⁵ There are differing opinions regarding its utility, financial viability and safety.⁵ Despite these discrepancies, practitioners are implementing telehealth in various ways that are showing positive improvements in the healthcare field.⁵

Evolution of telehealth

The term telehealth is a new concept that has just appeared in recent decades.⁴ Telehealth can technically be dated back to the 1800s when the telephone and telegraph were first invented.⁴ In the early 1900s, telecardiology was used to send heart rhythms to distant physicians.⁴ Today, the telephone is used by health care professionals to communicate with patients.⁴ With the rapid expansion of the internet and smartphone/mobile technology, telehealth has been brought to the forefront of medical care.⁴ Because of improvements in digital processing and storage capabilities, there has been a reduction in the size and cost of the technical support needed to initiate telehealth programs and services. The expansion of mobile phone use brought about solutions to big health care challenges, including early





diagnosis and access to care.⁵ This technology revolution became a new way for healthcare workers to connect with the people that they serve, obtain health information in hard to reach areas, and shorten the time between a crisis and an appropriate response.⁵

Currently, about 59 million Americans live in health professional-shortage areas.⁴ These patients face a multitude of challenges; such as delays in scheduling appointments, extended waits at their appointments, and discontinuity of care.⁴ Telehealth services are beneficial to both patients and health care professionals by making appointments and monitoring more convenient and accessible for both parties. For example, services include filling in the gaps of care resulting from provider shortages and providing access to medical services when health clinics are closed. Furthermore, telehealth can reduce travel burdens for patients while facilitating services such as appointment scheduling and refilling prescriptions.²

Clinicians in a variety of fields are expanding telehealth utilization, indicating an increased need for more reliable evidence supporting the use of telehealth technology.² Specialists in fields such as cardiology, dermatology, gastroenterology, and many others use telehealth for real-time, off-site video consultations.² Telehealth can also be used for telephone, email, and video visits for intervention counseling, medication prescribing and management, and management of long-term treatment for chronic diseases.² Other aspects of health care that are utilizing telehealth include wellness interventions in areas such as health education, physical activity, diet monitoring, medication adherence and cognitive fitness.²

Telehealth is expanding rapidly. Its increasing presence in various health care fields strengthen the need to provide education on the role telehealth plays in patient healthcare.

Role in Healthcare

Various medical fields have embraced telehealth and some have integrated the technology to a degree where it is no longer perceived as telehealth.⁴ Some medical fields such as radiology and neurology utilize telecommunication to transfer images for remote off-site interpretation while other areas of practice are finding individual ways to adapt telehealth to best fit their needs.⁴ The increasing demand for integrated healthcare, technological advancement and consumer demand for efficacy are establishing telehealth as a major tool in the world of healthcare.⁴

The most common use of telehealth is for long distance evaluation and treatment of patients.⁴ Telehealth can provide means for practitioners to consult with patients in homes, schools, hospitals, clinics and other facilities thus establishing and maintaining patient-provider relationships.⁴ Beyond practitioner practice, tertiary care centers can utilize telecommunication to host virtual tumor boards and other video based care coordination.⁴ Telehealth has also been seen in pediatric care in which video technology can provide virtual access to a neonatologist during a high-risk delivery at a critical access hospital.⁴

Telecommunication and telehealth technologies have also been seen in the area of pharmacy. Clinical pharmacists are able to provide comprehensive medication management (CMM), which involves remote





monitoring and/or real-time encounters in conjunction with in-person visits.⁶ It is also utilized extensively in retail pharmacy where interprofessional communication is vital to patient care. Telehealth is used in the interactions between healthcare professionals and pharmacists, pharmacist interaction with insurance companies, patient interactions with various automated systems which are meant to improve adherence, and medication scheduling and organization.⁶ Patients can now use telehealth technologies on their smartphones to refill, pay for, and even schedule delivery for their prescriptions, thus reducing the need to drive up to the pharmacy.

Nursing is another area of healthcare which has embraced the use of telecommunications.⁷ Nurses can process patients through the use of telehealth technology by interacting with patients over the phone or video conference in order to identify and prioritize their health needs.⁷ By using critical thinking and obtaining accurate information, nurses are able to perform an assessment of the situation and can direct patients to appropriate medical interventions.⁷

The incorporation of telehealth patient care services into geographically limited settings is an efficient use of health care professionals' time, resources, and expertise.⁴ Telehealth improves upon patient convenience, assists patients in accessing sub-specialty healthcare and helps reduce time and expense for the patient.⁴ In addition, telehealth may promote cost savings for healthcare facilities by decreasing hospitalizations, assisting in transitions of care, or reducing transportation costs for healthcare professionals.⁴ Overall, telehealth improves patient access to care and can be

incorporated into many different aspects and areas of care with the potential to expand in its uses.⁴

Future of Telehealth

Telehealth has been increasing in use in health care settings to help better serve patients and provide more efficient services for healthcare workers. The opportunities for telehealth are rapidly expanding as the potential of the consumer market is attractive to technology firms, fitness companies and health care providers.⁸ Telehealth allows these multiple entities to work together to provide patient-centered, individualized, low-cost, and convenient access to healthcare through new devices, settings, and services.⁸

According to research by REACH health, the most frequent used telehealth services are in stroke, neurology, pediatrics, radiology, and psychiatry and behavioral health, but growth is emerging in areas such as dermatology, cardiology, chronic care, obstetrics, and gynecological services.⁸ For example, telehealth may have a potential role in virtual chronic disease management.⁴ These patients require frequent visits to the doctor, and by targeting this patient population and providing an easier way for patients to obtain visits and monitoring medications, telehealth can help to decrease the number of emergency room visits and hospital admissions.⁴ Telehealth can be put to use in the future by offering new avenues to address population health needs and make an effort to help keep communities healthier, address growing demands, reduce hospital admissions, improve patient health, and provide better care coordination across the healthcare continuum.⁸ One example in

4





which telehealth is providing new avenues to address patient population needs is in an application called “Telestroke.” This application was developed to help advance the care of strokes in all different settings. Data is entered for a particular patient stroke case (usually in a rural, remote location) and is sent to a main computer database in a primary, certified comprehensive stroke center. The device helps health care professionals in a remote location analyze all aspects of the patient case and allows them to make decisions specific to each patient who may not be able to be transferred to the main stroke center. By linking a database to stroke care, it allows hospitals to link into the system and give care to stroke patients that come into the hospital.¹¹ This allows for better care coordination and for more personalized health care to address individual patient needs.

In order for telehealth to grow, it’s important to have evidence to support its use and efficacy. The research surrounding telehealth lags behind research that is focused on face to face interaction/care.⁴ Randomized controlled trials, multicenter studies, and other clinical outcomes studies are necessary because the research that is available focuses on patient satisfaction or the noninferiority of a specific telehealth program as compared to historical in-person care data.⁴ The expansion of telehealth is limited until more published data is available.

Limitations to Overcome

As promising as the future of telehealth may seem, there are multiple limitations that must be overcome in order for this route of medicine to be accepted by the healthcare world. As previously mentioned,

reimbursement conditions for telehealth services are fairly strict. This is especially true for services such as Medicare, having restrictions like only reimbursing for beneficiaries being in a “rural originating site.”² Medicare has preferred to pay for services completed within the confinements of actual health-care facilities as opposed to remotely caring for patients, not recognizing patient homes as reimbursable sites of patient care.⁹

Another limitation applying to telehealth is patient acceptance. There is a wide variety of patients that can be cared for from a telehealth perspective and they span a large range of ages and have many different disease states. The comfort level for what technology can be used for a young patient with type 1 diabetes could be very different from that of an older patient with Alzheimer’s disease. If there is a patient that has little to no experience with technology, the device in question must be easily compatible for this person. Otherwise, a caretaker is required for the telehealth care of this patient and that may not be entirely possible/convenient. It can be easy for patients to have less trust in telehealth practitioners as well. For example, patients may not be 100% comfortable with disclosing all necessary health information with health care professionals that they most likely have no previous relationship. This could possibly cause gaps in health care and may lead to the patient not receiving optimal care. Going along with this concept, there is also concern of any information the patient discloses being at risk of leakage due to possible data security and access problems.¹⁰

Among these concerns for telehealth, other limitations include changing software programs, compatibility issues between





different electronic health record systems data-monitoring devices, and multistate licensing problems. Throughout their time working in telehealth, practitioners will encounter many different software changes as products will come and go throughout their careers. Because of the lack of healthcare knowledge that software developers may have, it is important for the telehealth providers to have a sufficient competence with technology to understand how to use each product and to ask of the developers all of the necessary questions there may be to understand how to care for patients with each software product.² As for device compatibility issues, there are many possible pitfalls with patients using devices to monitor their own health data and trying to upload this information into the electronic health records of telehealth providers. If these devices are not compatible, it takes more time and energy for the patient to review their data during their interaction with the physician, when it may have been much easier for this information to be uploaded prior to the patient/practitioner interaction. Additionally, if the connection between patient device and electronic health record is not flawless, health providers may have a difficult time trying to evaluate all of the information they are being given from the large number of patients they are treating.² Along with this, it can be difficult trying to deal with licensure in different states, with many requirements and financial debts involved.²

Although there are multiple limitations to keep in mind with telehealth, there are also different methodologies being used to work around these limitations. Reimbursement for telehealth services is being expanded as evidenced by the formation of different groups such as a

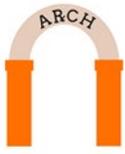
workgroup under the Current Procedural Terminology (CPT) Editorial Panel of the AMA that was formed in 2015 to help telehealth services be added to clinical practice billing coding. Additionally, the Digital Medicine Payment Advisory Group is being formed to help with coding and payments.² Medicare reimbursement is even being expanded as well, as evidenced by the 2015 Medicare Access and CHIP (Children's Health Insurance Program) Reauthorization Act, which provides more payment options and makes billing easier for telehealth providers.² Receiving more reimbursement requires more research to be conducted on the benefits of telehealth, and the 21st Century Cures Act is acknowledging this by requiring the federal government to complete more research on the effects of telehealth services on Medicare patients.²

While device compatibility with different health systems is a plausible concern, there are currently efforts being made to prevent compatibility issues. The SMART Health IT platform uses application programming interfaces to allow interoperability among different health devices and electronic health records.² Finally, multistate licensing issues are being combated by projects being initiated to increase the efficiency of this type of licensure for physicians. One such example is the Interstate Medical Licensure Compact, created by the Federation of State Medical Boards in 2013.²

Conclusion

Telehealth creates an efficient and effective way for healthcare providers to communicate with their patients. It has many benefits including providing access to healthcare in remote areas that would otherwise not get





help. With technology continually advancing, telehealth is advancing as well. It is allowing for better health care practices by making providers more accessible, and centering practices around the patients. Although it has made healthcare better for patients today, it still has a lot of progressing to do to make everything more accessible and effective for patients. As technology continues to advance, and health demands continue to increase, telehealth will need to continue to advance and help healthcare professionals provide the best care possible.





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