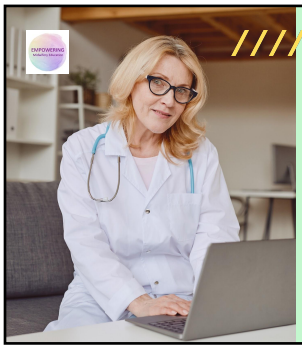


Introduction to Telehealth

Legal Disclaimer

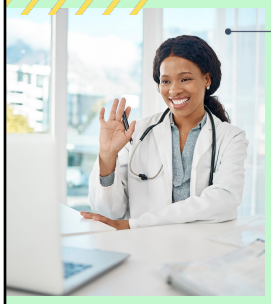
- Information is for general & educational purposes only
- Content is not, nor intended to be, a substitute for professional, legal, or clinical advice
- While we strive to make the information as timely & accurate as possible, we make no claims, promises, or guarantees about the accuracy, completeness, or adequacy of the information contained, & expressly disclaims liability for errors & omissions

Course Objectives

- Students will be able to verbalize what telehealth is
- Students will be able to verbalize the scope of telehealth
- Students will be able to verbalize the historical evolution of telehealth
- Students will be able to verbalize benefits & challenges of telehealth

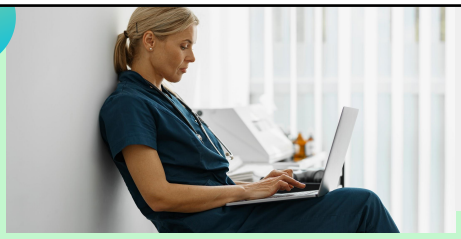
Why is This Topic Important?

- Allows healthcare providers to evaluate, diagnose, inform, & treat patients without an in-person visit
- Helps ensure patients receive optimal & timely healthcare by connecting them to needed services through telecommunication, remote patient monitoring (RPM), store-&-forward technologies, & mobile health (mHealth)
- Promotes healthcare access, improves care, & offers patients a level of convenience difficult to obtain with in-person care
- Aligns telehealth nursing with extensive health care environmental & technological transformation



Telehealth

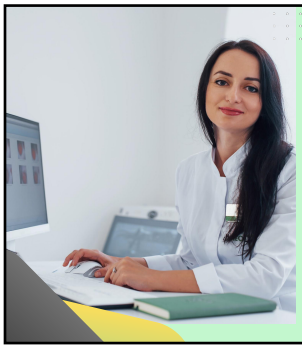
- Telemedicine or e-medicine
- Provision of healthcare via digital information & communication technologies
- Delivery of treatment & health-related services via telecommunication technologies & electronic information (computers & mobile devices) to provide & support virtual care, health education for patients, healthcare administration, & public health initiatives



Scope of Telehealth

- Quality of services provided through telehealth must be equivalent to quality of audiology or speech-language pathology services that are provided in person & must conform to all existing state, federal, & institutional professional standards, policies, & requirements for audiologists & speech-language pathologists
- Technology used, including but not limited to equipment, connectivity, software, hardware, & network compatibility, must be appropriate for the service being delivered & must address the unique needs of each patient
- Audio & video quality utilized must be sufficient to deliver services equivalent to services provided in person
- Person providing services is responsible for calibrating clinical instruments in accordance with standard operating procedures & manufacturer's specifications

- Person providing services shall comply with all state & federal laws, rules, & regulations governing maintenance of patient records, including maintaining patient confidentiality & protecting sensitive patient data
- Person providing services shall conduct initial assessment of each patient's candidacy for telehealth, including patient's behavioral, physical, & cognitive abilities to participate in services provided through telehealth
- Telehealth may not be provided only through written correspondence



- At a minimum, a person providing telehealth services shall provide a notice of telehealth services to each patient & if applicable, the patient's guardian, caregiver, or multidisciplinary team
- Notification must provide that a patient has the right to refuse services & has options for service delivery & must include instructions on filing & resolving complaints

Historical Evolution of Telehealth

- Telehealth emergence during COVID-19 pandemic may seem like it happened overnight. Coronavirus has certainly been a catalyst for our industry's reliance on virtual care
- However, telemedicine has been around for quite some time. What may appear to be a sudden surge has truthfully been a slow burn
- The concept & practice of using telecommunications technology to remotely diagnose & treat patients has been around for decades

Civil War & Telegraph Transmission

- Communication across long physical distances was revolutionized with the invention of electric telegraph in 1840s
- First major instance of telecommunications for medical purposes came about a decade later when 15,000 miles of telegraph cable were laid during the Civil War
- Telegraph made remote wartime communication possible. It was used to order medical supplies & transmit casualty reports
- Tech was so integrated that telegraph wagons commonly idled right behind the frontline, sending & receiving information from the battlefield as needed

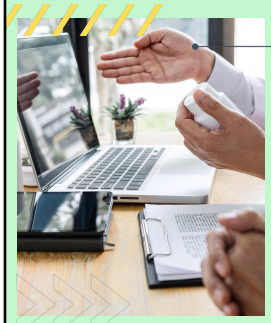
Telephone Revolution

- In 1876, Alexander Graham Bell was awarded a patent for his telephone & rest, is history. This was a monumental step in remote communication, which medical professionals quickly adopted
- Articles from late 19th-century medical journal report the use of telephone to cut down unnecessary office visits in early 1879
- Telephone allowed doctors to consult with peers, enriching larger healthcare community

Radio Communication Emerges

- Radio communication saw its beginnings at the turn of the century, & was still a developing technology during early 1900s
- One of the first telehealth efforts that incorporated radio communication came out of Australia in 1928
- Reverend John Flynn founded Aerial Medical Service (AMS), which used telegraph, radio, & airplanes to deliver treatment to remote areas of the country

- Doctors consulted & diagnosed patients using a combination of telegraph & radio communication.Then, the service flew a qualified health professional to the patient to provide any necessary care
- AMS received international attention & is considered to be the first organization to address limited geographical access to healthcare with telecommunications technology
- Few decades ago radio communication was common place all over the world. By the time of Korean & Vietnam conflicts, US military relied heavily on telemedicine via radio to dispatch medical teams & helicopters



Television Adds Visual Component to Telehealth

- Invention of television made visual telecommunications a reality, which is a valuable tool for early telemedicine practitioners
- By mid-1950s, Nebraska Psychiatric Institute was using closed-circuit television to remotely monitor patients
- By 1959, institute provide group therapy & long-term therapy, consultation-liaison psychiatry, & medical student training at Norfolk State Hospital

- In 1964, two locations established their first interactive, two-way video link, negating 112 miles between them
- Three years later, the first comprehensive telemedicine system was installed to connect Boston's Logan Airport medical station to Massachusetts General Hospital
- Besides facilitating remote medical treatment between the two locations, the operation also demonstrated that remote diagnoses could be made through interactive television
- Researchers showed that X-rays, lab results, & medical records could be successfully transmitted as well

Space Travel & NASA Push Telehealth Forward

- Telemedicine got its first modern upgrade in 1960s due to one central question: Could the human body function in outer space?
- This was a true unknown before the first human astronaut made it to space. Medical experts were particularly concerned about blood circulation & respiration issues

- US & Soviets hooked animals up to medical monitoring systems & sent them into space. Biometric data was transmitted back to scientists on Earth via telemetric link
- Few years later, NASA established Integrated Medical & Behavioral Laboratories & Measurement Systems (IMBLMS) program
- It was meant to develop a system that could acquire, display, analyze, & record a wide variety of medical, biochemical, microbiological, & behavioral, measurements & experiments designed to study in detail man's well-being & operational capability

Telehealth Gets an Injection of Federal Money

- In the late 1960s & early 1970s, federal government provided funding for seven telemedicine research & development projects
- They aimed to further explore how technology could be used to overcome challenges to medical care of the time
- Majority of them took place in rural areas, where access to healthcare was already an issue

- One of these programs was an extension of NASA's IMBLMS program, called Space Technology Applied to Rural Papago Advanced Health Care (STARPAHC). It leveraged the remote monitoring tech they developed for space travel to serve terrestrial, rural populations
- Project was conducted on Papago reservation in Arizona. It evaluated the practicality & efficacy of a large-scale telemedicine operation
- STARPAHC demonstrated that telecommunications were a sound foundation for remote treatment
- Furthermore, telemedicine proved to be a viable & effective alternative to traveling across great distances to receive medical attention

Internet Transform Telemedicine

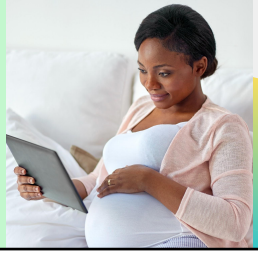
- As we are all aware, Internet changed everything
- The speed with which humans could communicate & transfer information was revolutionary
- In the case of telemedicine, internet was essentially the technological breakthrough it had been waiting for

- Scientists & medical experts had more opportunities & dynamic tools, to conduct remote treatment
- Internet unlocked new frontier for telehealth, due to factors such as:
  - Digital tech made efficient transmission of large quantities of data over long distances. As a result, telemedicine speed & scope were forever enhanced
  - Digitization of information made sending, receiving, managing, & storing data much easier
  - Internet's widespread adoption in all personal & professional settings led to substantial cost savings for digital technology needed to deliver telemedicine
- Telemedicine has been consistently improved & refined over the last few decades, but powerful digital technology is still the foundation of our telehealth operations today

Benefits of Telehealth for Providers

Improved Access to Medical Care

- Call centers & nurse advice lines have brought most immediate telehealth benefits & challenges into the spotlight, & in 2020, benefits have by far outweighed challenges
- Ability to treat minor COVID symptoms while the patient is at home is critical. Throughout pandemic, many patients have been wary & avoid provider waiting rooms, so distanced diagnosis & prescription are a welcome relief



For years before the pandemic, healthcare providers have struggled to provide adequate care for patients who:

- Need to be triaged
- Need to be treated by specialists at distant locations
- Live in rural areas
- Cannot travel to your facility

Higher Patient Engagement Rates

- Since clients can get everything delivered with a tap, they expect the same from healthcare providers
- Online reviews, appointment booking, & digital reminders help patients engage in care, relieving providers mundane tasks that pull them away from patient care
- Reduces risk of exposure & anxiety around in-person doctor's office visits
- Reduces wait times so providers can treat & engage more patients every day

Better Patient Outcomes

- One of the benefits of telehealth for providers is a significant improvement in outcomes. Chronic condition care presents the perfect pairing for telehealth
- Challenges around monitoring diabetes, high blood pressure, heart disease, as well as musculoskeletal & behavioral health have been met with remote patient monitoring technology
- Virtual care is its ability to protect patients who are at a higher risk for COVID complications
- Logistical telehealth challenges some providers still cite seem less pressing compared to the way it limits exposure to virus

Lower Hospital Readmission & No Show Rates

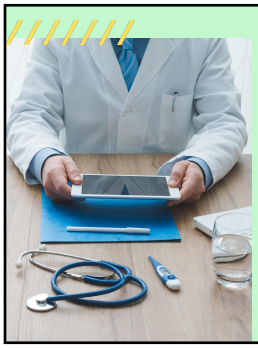
- Instead of making costly, unnecessary trips to an immediate care clinic or emergency room, patients with acute health issues can now get immediate care without risking exposure to the virus

- Since post-discharge & follow-up care can be done virtually, patients take & implement instructions & prescriptions at their own pace
- Gives them opportunities to raise questions or concerns using devices they're comfortable with
- The patients who typically miss clinic appointments due to transportation issues, mobility challenges, or disabilities can now attend telehealth appointments from any accessible location or device
- They are more likely to follow through with instructions & prescriptions on their own terms
- This level of engagement keeps patients healthier more vigilant, & more likely to seek intervention before their health conditions reach critical stages

Cost Cutting

- One of the most well researched advantages of telehealth
- When you adopt telehealth at your hospital or clinic, you'll lower your overhead & distribute resources more efficiently
- Make your service hours more flexible, increasing motivation & productivity for clinicians while reducing stress for patients & clinicians

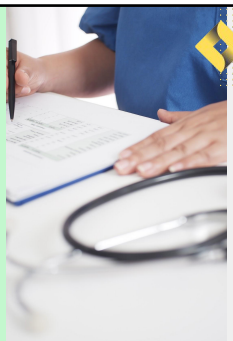
- Research has confirmed that health-tech platforms enable quicker & more efficient care in lower-cost settings
- Helps providers cut costs by reducing time & distance required for treatment. When patients don't skip visits, they're less likely to wait until they've developed critical issues, which are much more costly to treat
- One of the less obvious telehealth benefits is the reduction of overused procedures like imaging. According to Diagnostic Imaging, electronic consultation between radiologists & referring physicians can reduce the need for unnecessary imaging exams
- HIPAA-compliant telehealth platforms that integrate your EMR systems will also help you cut costs by streamlining workflows & sharing information between providers at your facility as well as those at specialty clinics



Provider Telehealth Challenges

Reimbursement

- One of the biggest challenges with telemedicine has been that Medicaid & Medicare did not reimburse for it at the same level as traditional on-site visits
- During the pandemic, however, providers have enjoyed expanded reimbursement from the Center of Medicaid and Medicare Services
- The future of this temporary change is uncertain



Regulations

- Restrictions & regulations are some of most significant telehealth challenges
- As of March 1, 2020 , The American Medical Association reported that during COVID-19 public health emergency, Medicare would pay healthcare providers same rate for telehealth services as it did for on-site visits which applies to all healthcare services, not just COVID-19
- For now, providers can reduce or waive cost-sharing for telehealth visits, e-visits, virtual check-ins, & remote patient monitoring

Scalability

- Biggest telehealth challenges for healthcare providers are related to scalability
- If healthcare organizations lack next-generation infrastructure, implementing, addressing, & scaling telehealth benefits becomes extremely difficult
- Platforms like Welkin are designed to help various types & sizes of healthcare organizations scale efficiently & implement telehealth effectively making healthcare less stressful & more enjoyable for patients & providers

Conclusion

- Telehealth had been redefining healthcare for years before COVID-19 sped up the adoption of this convenient, efficient, & effective care delivery model
- Providers & patients alike who still have reservations about using telehealth may not be informed about its vast workflow & outcome benefits
- The Scope presents new thinking about telehealth as an integral component of today's healthcare practice. Inspired by the vision, values, & traditions of the past
- The development of modern telehealth began with the invention of telecommunication technology & infrastructure, including the telephone & telegraph. Early on, telehealth technology was used in military situations

Conclusion

- As healthcare providers seek more efficient ways to provide care at less cost to the patient, telehealth role has grown
- The use of virtual healthcare grew during the pandemic
- It is likely that telehealth use will continue to grow & be incorporated into the healthcare provision worldwide
- Telehealth has been anointed as one of the safest most effective ways to deliver remote health services
- Around the world, healthcare providers big & small are using telehealth technology to connect with patients in a COVID-safe manner
- Telehealth has become so useful & ubiquitous to industry pundits & their patients

Conclusion

- However, while telehealth is convenient and cost-effective for providers & patients alike, it is not applicable to all health settings, & it is important to note that there are benefits & challenges when it comes to using this form of technology
- Telehealth will continue to incorporate technologies like artificial intelligence & machine learning to provide predictive healthcare analytics & mine emergent medical data
- As telehealth technologies advance, there will be a need for regulatory oversight & reform to ensure patients are protected

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