

# Transforming Healthcare

---

TELEHEALTH TECHNOLOGY



INTIVA HEALTH

## Executive summary

---

This white paper dives into the world of telehealth and telemedicine—a technology that has rocketed into the forefront of the health care industry. While it existed in a primitive form for decades, recently, telehealth technology has evolved so rapidly that the entire health care industry is changing along with it. Due to the coronavirus pandemic, health care facilities across the United States and around the globe are turning to telehealth to keep up with patient demand and provide routine patient care. As an increasing number of benefits from telehealth technology emerges for patients, providers, and medical facilities alike, the health care industry as we know it will undergo a permanent transformation that will persist long after the pandemic ends.



# Table of contents

---

- Telehealth vs. Telemedicine: What's The Difference?**..... 4
- How Telehealth is Beneficial for Facilities:**.....5
- How Telehealth Advances Patient Care:**.....6
  - Telehealth Treatment Types:.....7
  - Ways to Utilize Telehealth Technology For Routine Care:.....7
- Telehealth Tips to Improve the Patient Experience:**..... 8
  - Creating the Patient Experience:.....9
- Turning to Telehealth During a Health Care Crisis:**.....10
  - Ways to Utilize Telehealth Technology During COVID-19.....11
- Telehealth Technology is Here to Stay**.....11
- How Ready Doc™ Is Improving Health Care**.....12
- References:**.....13

# Telehealth vs. Telemedicine: what's the difference?

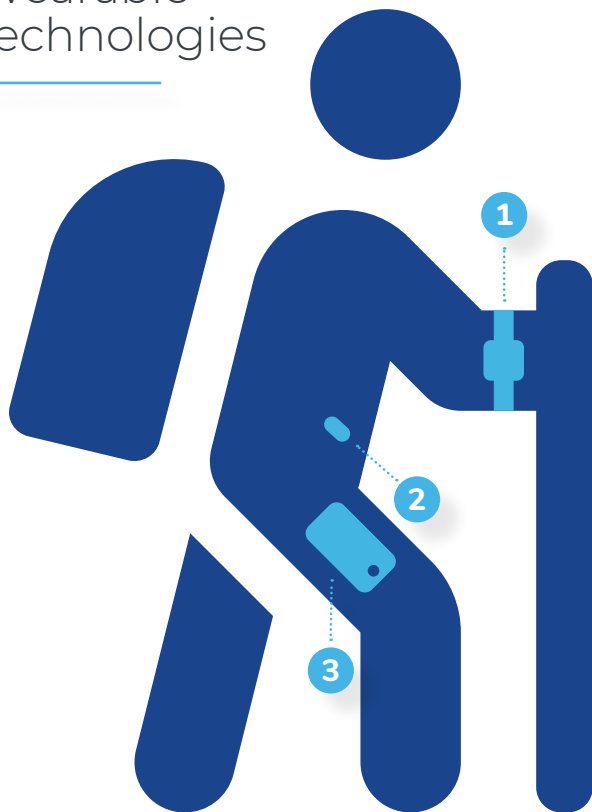
---

The Health Resources Services Administration defines telehealth as the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration. Technologies that make telehealth feasible include reliable, secure internet access, video conferencing, store-and-forward imaging, streaming media, and terrestrial and wireless communications.

Telehealth differs from telemedicine in that telehealth refers to a broader scope of remote health care services, which encompasses telemedicine. To be defined as telemedicine, interactive health care communication must occur with a patient and clinician on both “ends” of the exchange.

## Wearable technologies

---

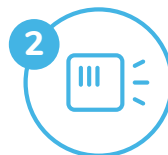


While telemedicine refers specifically to remote clinical services between patients and providers, telehealth can refer to remote, non-clinical services, such as provider training, administrative meetings, and continuing medical education. Telehealth can also include medical devices that collect and transmit health information to manage chronic conditions, such as smartphone apps, wearable sensor technologies like activity trackers or blood glucose monitors, and automated reminders for prescription medications.

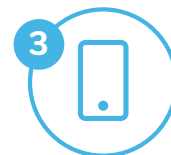
Technologically speaking, the concept of telemedicine is not new. Health care providers have been offering remote services for patients for many years. This allows patients to receive healthcare without leaving their home, office, dorm room, hotel, or beyond. Telemedicine first began on landline telephones. With the advancement of technology, telemedicine has grown to encompass a variety of services and provide a range of benefits for both the providers and the patients.



SMART WATCH



WEARABLE SENSOR



SMARTPHONE APPS



## How telehealth is beneficial for facilities

---

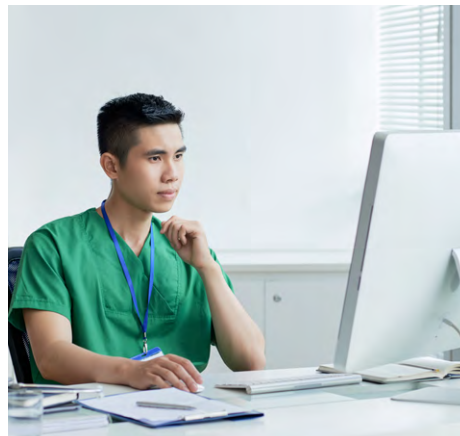
While improving patient care, access, and overall health and well-being are clearly the primary motivators for rural health care systems to implement the use of telehealth technologies, it can be economically advantageous for facilities and communities alike. The NTCA Rural Broadband Association describes themselves as the “premier association representing nearly 850 independent, community-based telecommunications companies that are leading innovation in rural and small-town America.” Researchers stated that via telehealth solutions, hospitals could save more than \$80,000 annually in states such as Texas, Oklahoma, Kansas, and Arkansas. The rural communities in these states could save an average of \$40,000 a year by using telehealth technologies instead of traveling. The report stated that if residents in rural communities utilized physician services with telehealth, an average of \$24,000 would be saved in travel costs and an average of \$16,000 would be saved in lost wages associated with taking time off from work to travel a long distance to receive services from qualified physicians.

Researchers stated that via telehealth solutions, rural hospitals could

**SAVE MORE  
THAN  
\$80,000  
ANNUALLY**

in states such as  
Texas, Oklahoma, Kansas, and Arkansas.

Facilities implementing telehealth solutions not only create options for their current patient base, they expand their potential pool of patients beyond existing geographic constraints. Further, their employees and health care providers are more easily able to access continuing education, remote training, diagnostic assistance, and other means of expanding their services and developing provider expertise.



## How telehealth advances patient care

As mentioned above, one of the primary obstacles involving patient access to health care in America is geographical constraints, i.e. distance to hospitals and travel times in the event of a medical emergency or need for specialized care. A study conducted by the University of Iowa and published in the journal *Telemedicine and e-Health* (Mohr et al. 2018) focused on 14 hospitals in the Midwest with emergency department telehealth programs. Researchers found that the use of telehealth technology has helped reduce emergency room wait times for patients in rural hospitals by an average of six minutes. Another benefit of telehealth which emerged from the study was the finding that the length of stay for patients that were seen by telehealth providers prior to hospital admission was an average of 22 minutes shorter.

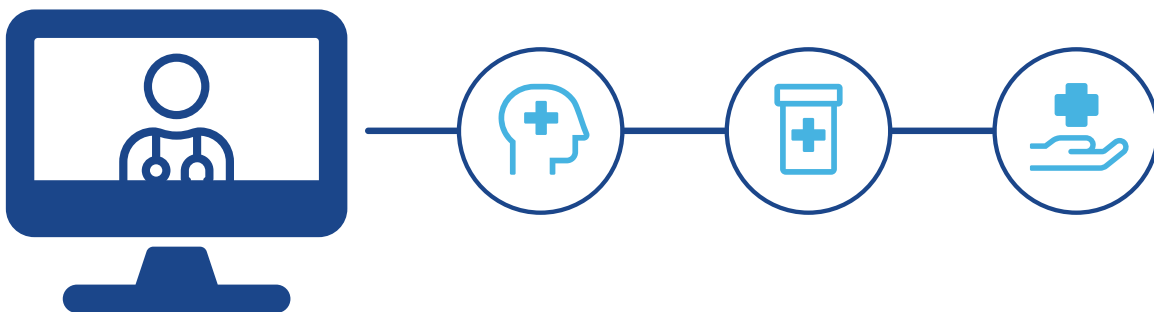
Telehealth also has the potential to expand access to additional health care services which may not be accessible at a local, rural health care facility. Provider recruitment and retention, a low volume of patients, and inadequate resources are all factors that could prevent specialized health care services from being offered in rural America. Telehealth may also be especially important for providing care in disciplines that are not well represented in rural areas. In a recent analysis of rural Medicare beneficiaries, researchers found that nearly 80 percent of telehealth visits were related to mental health conditions. Medicare has increased its coverage of telehealth services for patients living in rural areas, and in 2018 Congress further expanded coverage to include telestroke care and allow for rapid virtual assessment of potential stroke patients.

An American Hospital Association report found that telehealth holds great potential to address some of the patient access issues and health disparities discussed earlier in this paper that exist across many communities, but have been particularly problematic in rural areas that suffer from geographic isolation and a geriatric demographic. In public health crises, such as the global COVID-19 pandemic, telehealth may become the safest option for treatment of non life-threatening conditions. As technology continues to improve and the notion of delivery of health care via virtual connections becomes more accepted in the general population, the utilization of telehealth services will increase.

REDUCE EMERGENCY ROOM WAIT TIMES BY



REDUCED PATIENTS STAY BY





# Telehealth treatment types

---

## Synchronous:

This includes real-time telephone or live audio-video interaction typically with a patient using a smartphone, tablet, or computer.

## Asynchronous:

This includes “store and forward” technology where messages, images, or data are collected at one point in time and interpreted or responded to later. Online patient portals can facilitate this type of communication between provider and patient through secure messaging.

## Remote patient monitoring:

This allows direct transmission of a patient's clinical measurements from a distance (may or may not be in real time) to their healthcare provider.

# Ways to utilize telehealth technology for routine care

---

- Access primary care providers
- Access specialty care for mental and behavioral health
- Access specialty care for chronic health conditions
- Manage medications
- Provide coaching and support for patients managing chronic health conditions, including weight management and nutrition counseling
- Participate in physical therapy, occupational therapy, and other modalities as a hybrid approach to complement in-person care for optimal health
- Monitor clinical signs of certain chronic medical conditions (e.g., blood pressure, blood glucose, other remote assessments)
- Engage in case management for patients who have difficulty accessing care (e.g., those who live in very rural settings, older adults, those with limited mobility)
- Follow up with patients after hospitalization
- Deliver advance care planning and counseling to patients and caregivers to document preferences if a life-threatening event or medical crisis occurs
- Provide non-emergency care to residents in long-term care facilities
- Provide education and training for providers through peer-to-peer professional medical consultations (inpatient or outpatient) that are not locally available, particularly in rural areas



# Telehealth tips to improve the patient experience

---

Physicians need minimal additional training to implement telehealth visits for their patients. In recent years, the integration of digital health tools has grown significantly among physicians. In addition to interactive telemedicine services, an increasing number of health care providers have expressed interest in technologies that aid in remote monitoring, clinical decision support, patient engagement, workflow enhancement, and consumer access to clinical data. However, the environment in which a physician conducts a telehealth consultation is crucial for patient engagement and satisfaction. Health care providers need to carefully consider the appearance of themselves and their “virtual exam room.” There is much more thought that needs to be put into the appointment than the environment for the consultation. As the health care industry evolves and adapts to consumer expectations, a complete patient experience must be created in the virtual world that is equitable to what would be expected from an in-person visit.

Certain behaviors that physicians may not even consider during an in-person visit could harm business in a telehealth consultation, and may result in a poor experience for both the health care provider and their patient.

Often times, telehealth consultations can be perceived as less personal and less private than in-person visits. With that in mind, a physician must go the extra mile to try and show the same attentiveness that they would in a physical exam room.

A physician is obligated to maintain the privacy and security of patient interactions during telehealth appointments in the same manner as they would during an in-person visit. The Health Insurance Portability and Accountability Act (HIPAA) establishes guidelines for electronic health transactions and the security of personal health information (PHI). The provider is responsible for ensuring the overall safety and security of telehealth encounters, including patient privacy and PHI data protection.





# Creating the patient experience

---

## **First Impressions Matter:**

As with any usage of a digital video conferencing technology, a person often fills up the entire screen. It is important that physicians make a concerted effort to demonstrate a pleasant visual presence. This goes beyond the physical appearance; the “exam room” in which a physician conducts the appointment is also important. Physicians should make sure they are in a camera-friendly location that best serves both their reputation and the facility as a whole. The telehealth appointment should be conducted in the same room as where a regular patient exam would take place. However, it is important to be mindful of making sure the patient is focused on their health care provider and vice versa. The patient can only see what is in frame of the camera, and therefore physicians should limit clutter in the background, angle the camera so that they are the primary point of focus and fill the majority, but not all, of the camera frame.

## **Dress for success:**

The clothing a physician wears can also have a noticeable effect on the quality of their virtual presence. Similar to a job interview, when dressing for a telehealth appointment, avoid excessively bright or dark colors. Take into consideration how the camera angle, lighting, and on-screen appearance will affect the appointment. The traditional white lab coat may look clean and professional in person, yet it can reflect light and appear too bright on screen.

## **Lights, Camera, Action:**

If the lighting in a virtual exam room is dark, off-color, or even too bright, it could disrupt the patient experience. Physicians should make sure the room they are set up in is as welcoming as it could be in person. A dark or dimly lit telehealth setting could potentially have a negative effect on a patient’s interpretation of the assessment and diagnosis given.

Natural lighting works best for all skin tones. However natural lighting is not always abundant in most health care facilities. Physicians must ensure their lighting source is bright and not flickering. Another key to proper lighting is to not mix the types of light your sources emit.

## **Do a test run:**

What looks good in person doesn’t always translate well to video. Prior to conducting any telehealth appointments, do a test run with different lighting and camera positions.

While some of these concepts may seem frivolous, they all play an important role in the patient experience—the most critical aspect of a telehealth appointment.



# Turning to telehealth during a health care crisis

---

Due to the coronavirus pandemic, health care facilities across the United States and around the globe are struggling to keep up with the demand for medical services. Many are facing supply shortages, staffing shortages, and health care administration is overwhelmed. Consequently, the advantages of telehealth and telemedicine are moving to the forefront. For example, Congress included \$500 million for the use of telehealth services in its emergency COVID-19 aid package passed toward the beginning of March. The legislation gave \$200 million to the Federal Communications Commission (FCC) to help it expand telehealth services during the pandemic. The FCC Chairperson proposed part of the funding to allow eligible health care providers to purchase devices to assist with broadband connectivity.

Additionally, the federal government lifted restrictions on Medicare reimbursement for telehealth services. This immediately allowed telephone and videoconferencing between doctors and patients. Practical applications of the new, more inclusive regulations regarding telehealth and telemedicine have already been put into place for health care services treating coronavirus and COVID-19 patients.

Due to the COVID-19 pandemic and the risk of disease transmission, health care systems have had to adjust the way they evaluate and care for patients—primarily via methods that do not rely on in-person services. Telehealth technology helps provide health care to patients while minimizing the transmission risk of the coronavirus.

While telehealth technology and its use are not new, widespread adoption among health care providers and their patients, beyond simple telephone correspondence, has been relatively slow (Harvey et al.). There was already increased interest in telehealth technology before the pandemic by both providers and patients (Martinez et al.) However, recent policy changes at the federal and state level due to the pandemic have reduced barriers to telehealth access and have promoted the use of the technology as a method of care delivery for acute, chronic, primary as well as specialty care (Bashur et al.). Several medical organizations have endorsed telehealth services, including the American Medical Association, American Academy of Pediatrics, and American Association of Nurse Practitioners. Several of these associations even provide guidance for medical practice in this evolving landscape. Among the myriad of benefits that have been discussed here, the most compelling overall is the fact that research has shown telehealth can also improve patient health outcomes (O'Connor et al.).

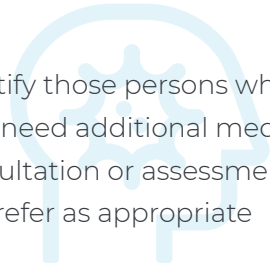


# Ways to utilize telehealth technology during COVID-19

---



Screen patients for COVID-19 symptoms and provide referrals



Identify those persons who may need additional medical consultation or assessment, and refer as appropriate



Provide low-risk urgent care for non-COVID-19 conditions

## Telehealth technology is here to stay

---

Eventually, the widespread effects of COVID-19 on society will pass, and people's daily lives will return to a new normal. However, the coronavirus pandemic will permanently alter many aspects of society. It is undoubtedly evident that the coronavirus has already altered how we think about health care, as telehealth and telemedicine become integral and essential components of the industry in the United States and around the world for the foreseeable future, and this new understanding and implementation of healthcare options will persist long after a vaccine is found. In the industrialized world, telehealth and telemedicine combined will move the delivery of health care services from the facility into the home of the patient. In regions with limited infrastructure or developing health care, telehealth will be used to connect health care providers based in private practices or hospitals to the patient. There are three factors that will determine the future of telehealth:

**Human behavior**

**Economics**

**Technology**

History has shown us that any advancement in technology with a behavioral effect has instigated change at every level of society—from the individual up to their social structure as a whole. Staffing shortages and decreasing reimbursements from payors and insurance networks are momentous drivers of technology-enabled health care.

Technological developments in mobile communications, computing power, secure cloud storage, nanotechnology, and the use of sensor devices will change the future of health care delivery. The growth and integration of information and communication technologies into virtual health-care delivery holds great potential for patients, providers, and payers in health systems of the future (Heinzelmann et al. 2005). The current pandemic has created a catalyst for more rapid adoption of future health care systems, and the question that remains is not if telehealth will become the new normal standard of health care, but when and how?

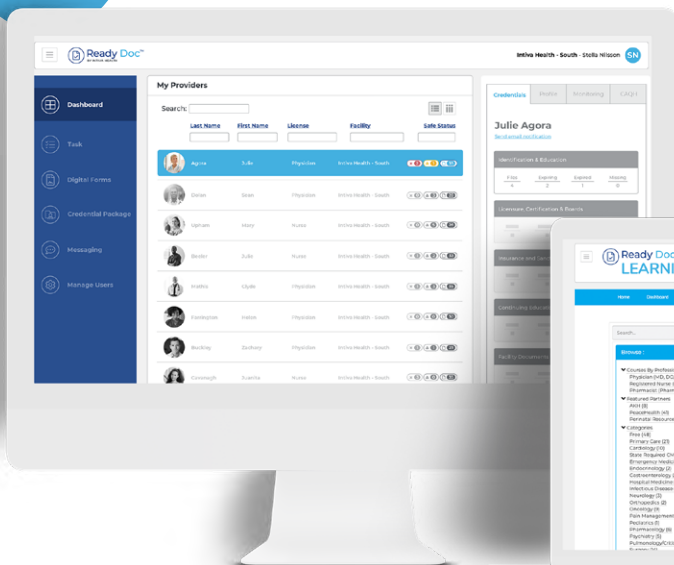


# How Ready Doc™ is improving health care

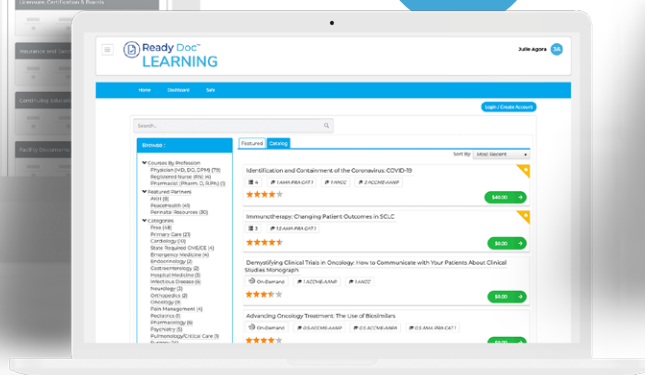
Intiva Health has consistently been improving the health in health care, most notably with the use of their credentialing software Ready Doc™. Similar to treatment methods and telehealth, credentialing has undergone a rapid change due to technology. Traditional forms of credentialing involved a manual process with spreadsheets, both electronic and on paper. This resulted in an enormous waste of time and money—costing providers and facilities millions of dollars in lost income and revenue over time. Other, outdated forms of health care administration allowed for lapses in compliance, HIPAA breaches, or insufficient care team communication and coordination. Ready Doc™ is an all-in-one credentialing, compliance, and communication platform that utilizes Hashgraph-based technology to create one of the fastest and most secure solutions on the market. Health care providers and administrators are able to complete the credentialing process, manage privileges, appointments, payor enrollment, and communicate with HIPAA-compliant messaging tools all in the same platform. Telehealth is one more piece of technology for Ready Doc™ to utilize in their one-stop-shop solution which has already changed how administrators and providers alike do business.



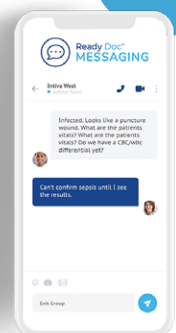
Ready Doc™  
Credentialing



Ready Doc™  
Learning



Ready Doc™  
Messaging



# References

---

American Academy of Pediatrics: The Use of Telemedicine to Address Access and Physician Workforce Shortages

American Medical Association, 2020. AMA Digital Health Research: Physician's motivation and requirements for adopting digital health—adoption and attitudinal shifts from 2016 to 2019. <https://www.ama-assn.org/system/files/2020-02/ama-digital-health-study.pdf>.

American Medical Association: COVID-19 Recent and Ongoing Advocacy Efforts

American Association of Nurse Practitioners: Position Statement on Telehealth

Bashshur R, Doarn CR, Frenk JM, Kvedar JC, Woolliscroft JO. Telemedicine and the COVID-19 Pandemic, Lessons for the Future. Telemedicine and e-Health. May 2020:571-3. <http://doi.org/10.1089/tmj.2020.29040.rb>

Harvey JB, Valenta S, Simpson K, Lyles M, McElligott J. Utilization of outpatient telehealth services in parity and nonparity states 2010–2015. Telemedicine and e-Health. 2019 Feb 1;25(2):132-6.

Heinzelmann, P. J., Lugn, N. E., & Kvedar, J. C. (2005). Telemedicine in the future. Journal of telemedicine and telecare, 11(8), 384–390. <https://doi.org/10.1177/1357633X0501100802>

Kurec AS. Telemedicine: emerging opportunities and future trends. Clin Lab Manage Rev. 1998;12(5):364-374.

Martinez KA, Rood M, Jhangiani N, Kou L, Rose S, Boissy A, Rothberg MB. Patterns of use and correlates of patient satisfaction with a large nationwide direct to consumer telemedicine service. Journal of General Internal Medicine. 2018 Oct 1;33(10):1768-73.

Medicare and Medicaid Programs; Policy and Regulatory Revisions in Response to the COVID-19 Public Health Emergency

O'Connor M, Asdornwised U, Dempsey ML, Hufferberger A, Jost S, Flynn D, Norris A. Using telehealth to reduce all-cause 30-day hospital readmissions among heart failure patients receiving skilled home health services. Applied Clinical Informatics. 2016;7(02):238-47.

Orlando JF, Beard M, Kumar S. "Systematic review of patient and caregivers' satisfaction with telehealth videoconferencing as a mode of service delivery in managing patients' health." PLOS One. 2019;14(8).

Tuckson RV, Edmunds M, Hodgkins ML. "Telehealth." New England Journal of Medicine. 2017;377:1585-92.

