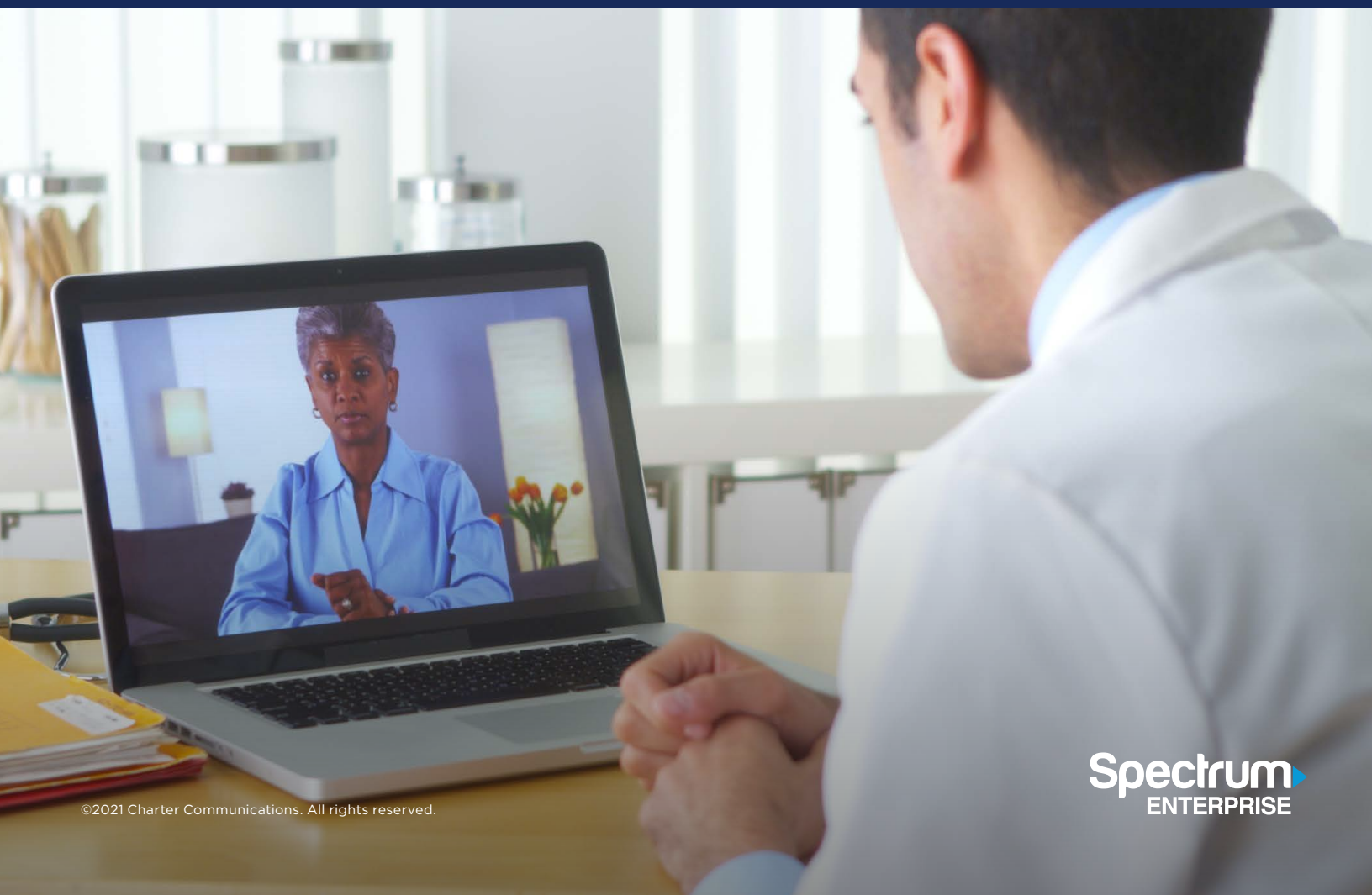
WHITE PAPER

A NEW DECADE FOR TELEHEALTH

A look at the rapid rise in telehealth adoption and what's required to support its growth



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With the onset of the COVID-19 pandemic, the adoption of telehealth shifted into hyperdrive. Providers saw telehealth take hold at an unprecedented pace — one that otherwise would have likely taken years.

Since the pandemic began, analysts have been rapidly revising their predictions for telehealth upward. Forrester analysts anticipated more than 1 billion virtual care visits in 2020.[1] While 900 million would be related to COVID-19, Forrester estimated that there would be as many as 200 million virtual visits related to general care and 80 million visits related to mental health needs.[2]

A reforecasting of the telehealth market by Frost & Sullivan in April 2020 also indicated a considerable spike in usage in 2020. The pre-COVID-19 compound annual growth rate (CAGR) was 28 percent for 2019-2025. That projection was revised to 38 percent. The most dramatic change in the projection being the year-over-year growth that is expected to occur in 2020 with a U.S. growth rate of 64 percent. Additionally, remote patient monitoring (RPM) is forecast to grow by 150 percent in 2020, while virtual visits are forecast to grow by 124 percent in 2020.[3]

Providers continue to report huge spikes in telemedicine visits. One reported an increase of 1,409 percent inpatient registrations from February to April.[4] A second virtual healthcare company reported seeing as many as 15,000 virtual care visits requested per day.[5]

Even after the COVID-19 crisis passes, telehealth is expected to continue to expand. It's anticipated that in 2021 and beyond, progressive health systems will start to view telehealth as a standard of care option for primary care virtual consultation. Frost & Sullivan believes in the next five years telehealth

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will have full regulatory approval and clinician support.6 Forrester predicts that healthcare organizations (HCOs) that don't deliver virtual care will face customer attrition.[7]

This white paper looks at what's driving the increased telehealth adoption beyond COVID-19 as well as what opportunities there are within the healthcare system for providers to use telehealth. We will also explore what the IT infrastructure requirements are to ensure HCOs can support current goals and the future growth of telehealth services.

2020 telehealth growth

1B+

virtual care visits predicted.[8]

124%

increase in virtual visits anticipated.[9]

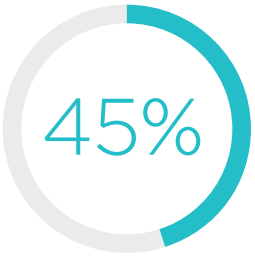
150%

growth expected in remote patient monitoring (RPM).[10]

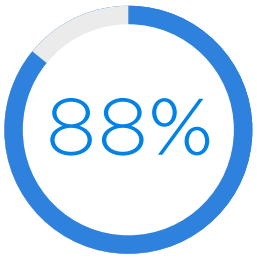
Key drivers of telehealth

Support for telehealth adoption has been gradually growing for some time now. Even before the COVID-19 pandemic, 58 percent of healthcare leaders said they placed a high priority on offering telehealth services.[11] Additionally, three-quarters of U.S. hospitals have consumer telehealth services in place or planned to implement the capability by the end of 2019.[12] And 86 percent of healthcare executives that have not already adopted telehealth into their operations say it's a medium to high priority.[13]

Beyond COVID-19, rising healthcare costs, increased use of mobile apps for health monitoring, the growing burden of chronic diseases, and changes in reimbursement policies are all driving the increased interest and expansion of telehealth. Telehealth is particularly appealing because it can generate costs savings while offering improved patient care and outcomes. By moving patients away from expensive ER visits, home health visits, or even being able to shorten hospital stays and reduce readmissions by providing ongoing virtual care after discharge, telemedicine has been shown to provide net cost savings of $19-121 per visit.[14]



of health professionals consider telemedicine a high priority.[15]



of health professionals are interested in using telemedicine to improve patient outcomes.[16]

Adoption is also increasing as patients become more familiar with the technologies used to support telehealth. More Americans are now using mobile health applications, including both clinical and lifestyle applications, to help educate and change health behaviors. According to telemedicine market research, around 7 out of 10 Americans use mobile apps to track at least one health indicator.[17] Through the use of mobile devices, research estimates that 60 percent of adults monitor their weight, diet and exercise while 33 percent track conditions like blood glucose, headaches, sleep patterns, blood pressure and chronic pain.[18]

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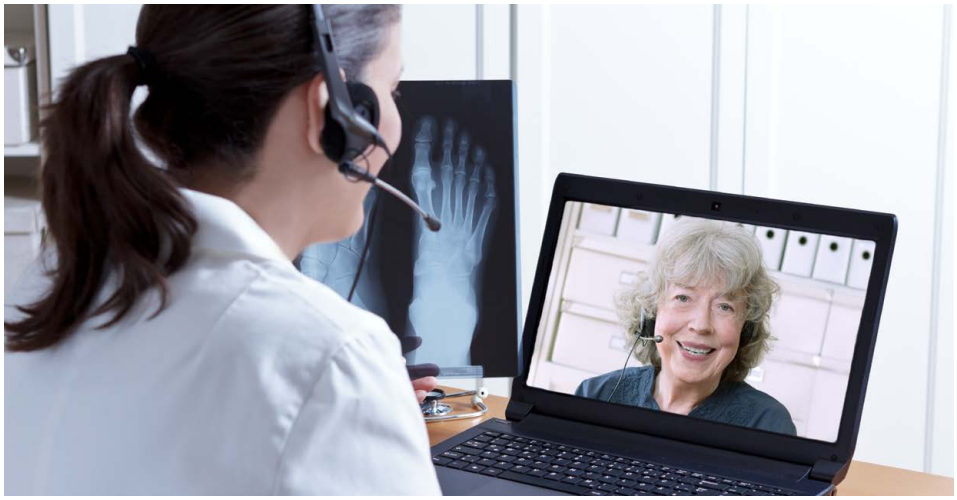
Consumers are also getting more comfortable with technology overall — not just mobile. To date, over three-quarters of consumers (77 percent) have shown interest in telehealth, and over 65 percent are willing to use telehealth to manage their chronic diseases.[19] What's more, this positive reception of telehealth services continues after use, with 67 percent of patients reporting telehealth increases their satisfaction with medical care.[20]

Over 150 pieces of telehealth legislation have been introduced, many of which have improved reimbursement or made access to telehealth care easier.[23]

The growing number of Americans with at least one chronic disease is another critical driver in the growth of telehealth. Almost half (45 percent) of Americans have at least one chronic illness — and it's estimated by 2025 this number will increase to 49 percent of Americans.[21] Given that chronic disease care accounts for almost 75 percent of all U.S. healthcare spending and requires frequent ongoing care management oversight from clinicians, telehealth could offer payers, providers and patients strong benefits if widely adopted.[22]

Finally, new changes in reimbursement policies and other regulations are helping to fuel and increase adoption rate growth. It's anticipated that the uptake of virtual care will continue to increase beyond the COVID-19 pandemic situation.



In the last few years, over 150 pieces of telehealth legislation have been introduced, many of which have improved reimbursement or made access to telehealth care easier.[24] According to the Center of Connected Health Policy, 50 states currently offer Medicaid reimbursement for live video as a fee-for-service.[25] The Centers for Medicare and Medicaid Services (CMS) also now provides reimbursements for telehealth services in emergency departments relating to behavioral health services, end-stage renal disease (ESRD) care, chronic disease management and professional consultations. CMS also offers telehealth-related reimbursements for remote patient monitoring (RPM).[26]

The federal government has also reduced a major telemedicine cost barrier for smaller physician practices by announcing Medicare and Medicaid would reimburse virtual visits at the same rate as in-office visits. Regulations to allow the use of mobile devices for virtual visits have also been temporarily put in place by the administration.[27]

While fewer than half of states mandate Medicaid coverage of telehealth, and only two-thirds require private payer coverage, states are waiving licensure requirements for telehealth physicians in response to the COVID-19 pandemic.[28] Additionally, payers are opting to expand coverage they already offered for telehealth services even further.

Telehealth funding opportunities

Connectivity to broadband network and telecommunications services can be a significant barrier to taking advantage of telehealth. Government sponsored programs can help, such as the FCC's Rural Health Care (RHC) Program, administered by the Universal Service Administrative Company (USAC).

The RHC Program provides funding to eligible healthcare providers serving rural and underserved communities to obtain discounted prices for broadband networks and telecommunications services.

A variety of other programs, including the COVID-19 Telehealth Program and the Connected Care Pilot Program, which collectively provided $300 million for expanding telehealth and connected care services in 2020, are strong indications of the government's support of telehealth. It's anticipated that additional funding assistance at the federal and state level will become available for continued expansion of virtual care.

$236B

anticipated global mHealth apps market size by 2026.[29]

Modalities and applications

In addition to providing numerous benefits such as cost and care efficiencies, telehealth technology has advanced to include a wide array of modalities and applications for its use. These include:

Live video

Live video can be used for a number of applications, including for consultative, diagnostic and treatment services. Applications can include educational training for clinicians, provider-to-provider live conferencing and access for patient-to-provider from a clinical setting.

At one children's hospital, telehealth with live video was implemented to reduce hospital stay durations for immunocompromised patient populations. After discharge, doctors could conduct follow-up visits ranging from diagnostic to providing comfort through care team interaction.

Live video conferencing has also been used to connect emergency providers with medical specialists who otherwise would not be available for consults. Remote ICU monitoring programs at hospitals can provide 24-hour backup, supervision and support to ICU medical staff through a combination of real-time video to observe patients, interactive video communications with on-site ICU providers, and digital patient monitoring equipment.[30]

Mobile health

Known as mHealth, mobile health is a relatively new and rapidly evolving aspect of technology-enabled healthcare. Applications for mHealth include sending SMS messages to prompt healthy behavior in patients or to send wide-scale community alerts about disease outbreaks. Mobile health is also frequently used to monitor health factors like sleep or blood glucose levels.

While fairly new, mHealth apps are projected to see significant growth. Grand View Research reported the global mHealth apps market size is expected to reach $236 billion by 2026 — expanding at a CAGR of 44.7 percent during the forecast period.[31]

Remote patient monitoring (RPM)

RPM allows for the continued monitoring of a patient's health data by providers. It's gaining traction for use when patients are released to home or a care facility, reducing hospital readmission rates. Monitoring programs can collect and transmit a wide range of health data, including heart rate, blood pressure, blood sugar, oxygen levels, weight and more. Providers can use this data for diagnostic and treatment purposes.

RPM can also help with infectious disease care. With the onset of the coronavirus pandemic, one health system says they have monitored more than 700 positive or presumptive positive COVID-19 patients. For patients who exhibit symptoms, but don't require hospitalization, they are given a thermometer and pulse oximeter and are monitored from home by the health system's remote patient monitoring team.[32]

Voice and unified communications solutions can be used to support training, voice-based consultations, mobile access and provide continuity for remote workers.

Store-and-forward technologies

Store-and-forward technologies allow for medical information, such as digital images, documents and pre-recorded videos to be digitally transmitted through secure email communication. Information transmitted can include MRIs, X-rays, patient data and more. Applications for store-and-forward technologies include:

- Better access and reduced wait times for specialty care in areas with shortages of medical specialists.
- Collaboration and review of patient cases by primary care providers and medical specialists even when they are geographically dispersed.

Voice and unified communications

Voice and unified communications (UC) can enable real-time communication between providers. These solutions can be used to support training via collaboration tools like video conferencing, voice-based consultations, mobile access and provide continuity for remote workers.

For example, in one small doctor's office with limited resources and a single staff nurse who performs multiple functions, video and unified communications can help with phone triage. The nurse can carry a mobile device attached to the office's phone system, allowing her to move freely about the facility without missing calls. This allows the nurse to assess patient symptoms via voice-based collaboration to determine whether they need to physically come in or if they could be seen in a virtual visit.

Internet of Things (IoT)

As the use of smartphones and bring your own device (BYOD) increases, healthcare organizations are investing more in IoT solutions. Over half (60 percent) of HCOs in one survey say they already use IoT devices in their facilities. Cost savings and an increase in innovation were cited as the primary benefits of IoT adoption.[33]

IoT devices can also help track bed occupancy and help practitioners monitor their patients remotely. IoT real-time location services (RTLS) can also allow healthcare facilities to track almost any asset within the facility, which can reduce time spent looking for assets as well as provide enhanced asset security.

Digital health infrastructure requirements

As telehealth adoption has drastically sped up, many providers are scrambling to get the appropriate IT infrastructure in place to support the rapidly increased demand. This is critical for healthcare organizations that want to maintain market share, patient volume and population health, according to Forrester. Large employers like Walmart already advocate for employee adoption of virtual care, and Amazon has deployed its own virtual care offering for employees. Forrester also notes that virtual care provides a way to increase appointment availability and stem potential customer attrition. Its report highlighted research that if a physician has no ability on a given day to see patients, one in five patients will seek care elsewhere. If availability for a patient visit is further than a week out, three in four will seek care elsewhere.[34]

Despite the implications of not having a robust telehealth offering, nearly half of healthcare executives estimate that their current telehealth solution fails 15 percent of the time.[35] Additionally, a lack of confidence in the reliability of telehealth technology was one of the top three reasons stated by providers as to why they are slow to adopt telehealth programs.[36]

Most basic to a telemedicine practice is a secure broadband internet connection. The reliability and speed of the internet connection will determine the video quality and amount and speed of data transfer. The South Central Telehealth Resource Center recommends no less than 2 Mbps upload and 2 Mbps download speed per telemedicine unit per call for optimum quality.[37] Additionally, as of 2015, the FCC has set the minimum benchmark speed for broadband at 25 Mbps downstream and 3 Mbps upstream.[38]

According to the FCC, telehealth services like videoconferencing or high-definition video require bandwidth of 10 Mbps for smaller medical practices up to 100 Mbps or 1 Gbps for larger facilities.[40] Additionally, for applications like telesurgery, the required data rate is between 137 Mbps to 1.6 Gbps with a latency of 150 milliseconds or less.[41]

Use of health information technology like real-time video and voice also requires internet and wide area network (WAN) connections that deliver minimal latency, high bandwidth and high availability. Additionally, a successful telehealth infrastructure needs to be flexible enough to handle the BYOD trend. A recent study shows widespread BYOD, including 91 percent of doctors, 79 percent of healthcare executives and 51 percent of nurses, saying they use their own devices at work.[42]

A robust telehealth infrastructure must include integrations for IoT as well as the capacity to handle future growth. To meet these requirements and have added scalability, it's important healthcare organizations ensure that broadband service and servers can be easily upgraded to support additional devices.

Finding the right partner

When choosing a network service provider to support telehealth services, consider the following:

The South Central Telehealth Resource Center recommends no less than 2 Mbps upload and 2 Mbps download speed per telemedicine unit per call for optimum quality.[39]

Do they provide fiber connectivity solutions?

More organizations today are turning to comprehensive fiber internet and Ethernet solutions that deliver fast speeds and enable data and patient health information to be quickly and easily shared among clinicians while ensuring healthcare data security. Fiber voice solutions can also provide next-generation phone collaboration features and deliver superior voice quality in addition to cost advantages.

Do they offer managed network services?

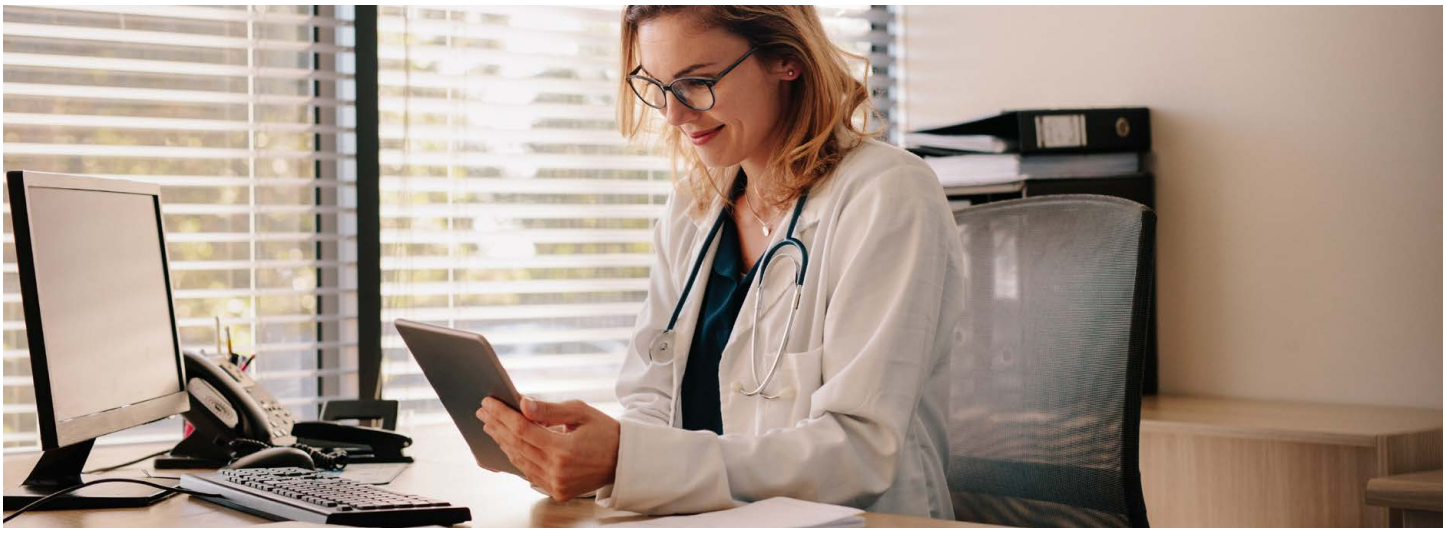
Fully managed WiFi and router services can help to ensure reliability and performance of WiFi and WAN connections throughout a facility while relieving IT teams of the burden of managing and updating equipment. Additionally, managed security solutions, including firewalls and VPN connections can help to safeguard a network.

Are they HIPAA-compatible?

Because telehealth involves the transmission of protected health information (PHI), it is essential that any telehealth solutions be compatible with the Health Insurance Portability and Accountability Act (HIPAA) to protect patient privacy. To ensure compatibility, make sure your provider can send all transmitted data in an encrypted and secure manner.

Can they support rural telehealth services?

The RHC Program provides funding to eligible healthcare providers to obtain broadband networks and telecom services that serve rural and underserved communities. Look for a partner who can offer broadband and telecom services eligible for RHC Program discounts and has a team of experienced professionals who can provide assistance in understanding the program.



Can they support big data requirements?

Networks must be ready to handle the surge in traffic that an influx of data brings. The WAN must be ready to collect, transport, store, analyze and retrieve this data. Scalability, speed and reliability are crucial.

Look for a provider who can provide integration of public, private and hybrid clouds with your WAN to reduce security risk, help you meet your HIPAA requirements and ensure faster and more consistent high performance in the cloud.

Do they have healthcare expertise?

The healthcare landscape is complex and highly-regulated, making implementing new technologies and infrastructure challenging. A HIMSS Certified partner will have the expertise and knowledge to provide guidance and best practices as well as assist you in advancing your organization's infrastructure capabilities and technology implementations.

Be prepared for telehealth growth today and tomorrow

As demand for telehealth services continues to climb, HCOs need to make sure they are able to meet the demand with a reliable, scalable IT infrastructure. The investment will not only help keep patients and providers safer during a pandemic but will offer long-term benefits in cost and workflow efficiencies as well as increased patient convenience and improved outcomes.

Spectrum Enterprise is an experienced healthcare IT solutions provider who can help. Visit our website to learn more.

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About Spectrum Enterprise

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