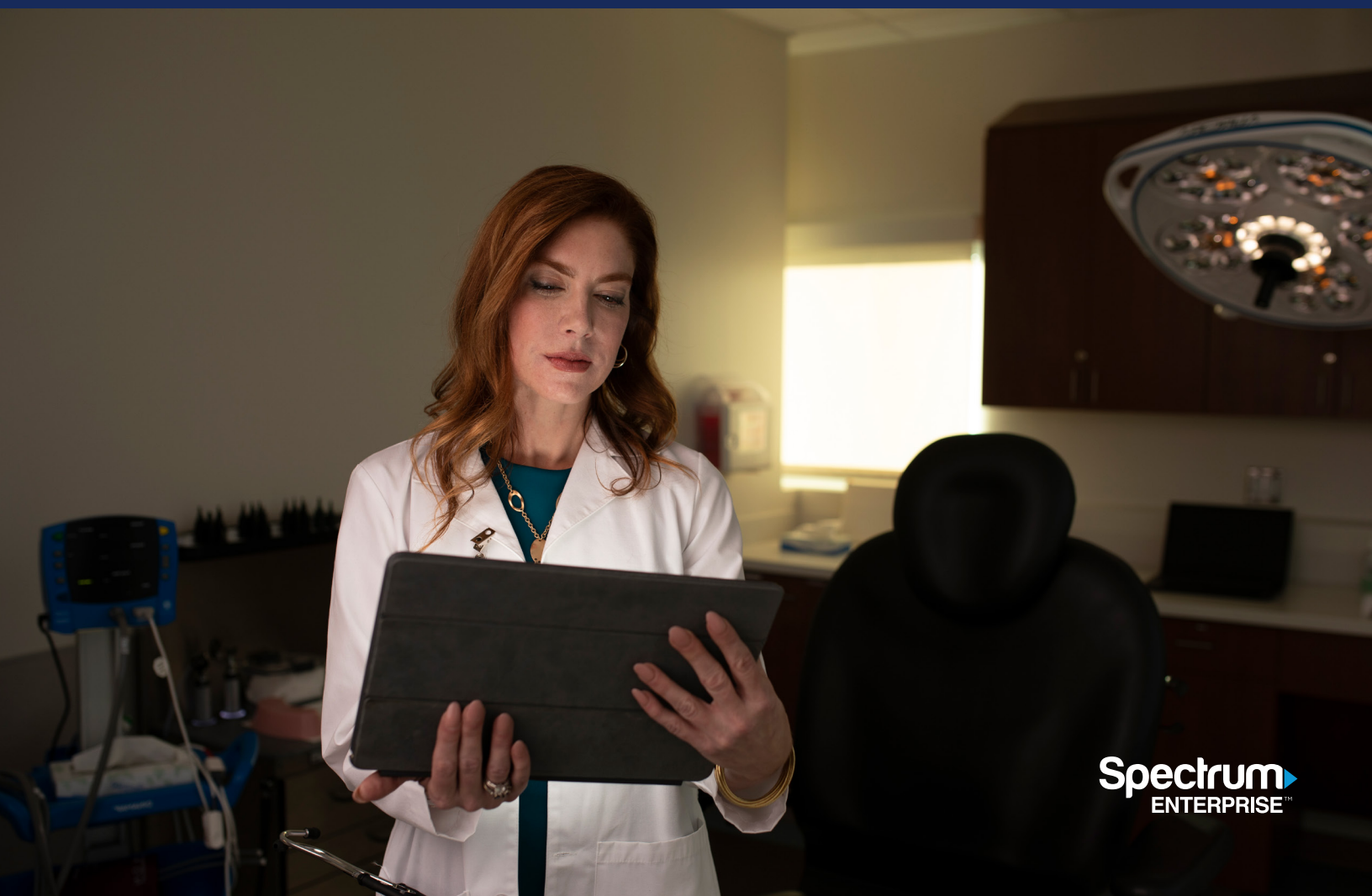
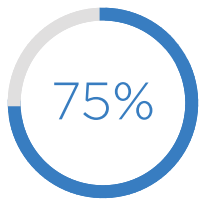


# Accelerate your mission with high-capacity networking for healthcare



The exponential growth of telehealth, electronic health records (EHRs), remote patient monitoring and connected medical devices has placed unprecedented demands on healthcare networks. A large hospital system today could have as many as 85,000 connected devices.<sup>1</sup> Applications, too, use substantially more data than in the past. Three-dimensional imaging, healthcare analytics and clinical application development all point to ever-increasing bandwidth needs for health systems.



of doctors are adopting some type of remote patient monitoring to manage chronic health conditions.<sup>5</sup>

Remote care has accelerated reliance on digital technology. As of 2023, 54% of patients surveyed in the United States indicated increased satisfaction with their care as a result of telemedicine.<sup>2</sup> By 2025, 70.6 million patients in the United States (nearly 26.2% of the population) will use patient monitoring devices.<sup>3</sup> Providers are equally committed, with 75% of doctors throughout urban and rural areas adopting some type of remote patient monitoring to manage chronic health conditions.<sup>4</sup> Traffic aggregation to support these distributed users will be a key challenge for managing network performance and costs, requiring new capabilities from internet providers.

At the same time, the industry is moving toward interoperability and standardization of EHRs to improve service and give patients better control over their medical information. Virtually all of 300 physicians (96%) whom were polled in a study said easier access to critical information could save patient lives.<sup>6</sup> Direct connections to data centers have become necessary for many large healthcare organizations to effectively manage patient data and ensure rapid service restoration in the event of a crisis.

In an industry where quality of data is directly connected to quality of care, latency, disruptions and outages pose unacceptable risks. IT leaders at the forefront of healthcare technology need a service partner that can support their network modernization and digital transformation goals. That requires optimizing capacity at every access point within the network today and expanding connectivity seamlessly as data needs evolve over time.



To manage data demands, providers need reliable, high-capacity bandwidth that can scale quickly as needs change.

## Demand is surging

Healthcare networks must support an array of devices and applications that will only grow more complex. To manage the data demands, they need reliable, high-capacity bandwidth that can scale quickly as needs change.

The network demands at a typical hospital might include:

- Devices from patients, guests and employees connecting to WiFi networks.
- AI-enabled pumps delivering precise doses of medication.
- Connected cameras and access systems for building security.
- TVs or tablets providing patient information and entertainment across a medical campus.

Other factors driving network modernization in healthcare include advanced imaging, mobile and smart devices, big data and cybersecurity defenses.

## Advanced imaging technology

Healthcare networks must handle ever-larger files and data sets. For example, large specimens, such as radical prostatectomy specimens that are digitized at the recommended 40-times magnification for primary clinical diagnoses, can be as large as 100 GB.<sup>7</sup> To accommodate these applications, healthcare providers' wide area networks (WANs) need higher-capacity site-to-site connections between facilities like imaging centers, clinics, hospitals and data centers.

## Mobile and smart devices

Today's healthcare networks extend to their "digital doorways," where patients access 24/7 scheduling and advance check-ins through their mobile devices. Once they arrive on campus, a wayfinding app might direct them to parking and guide them to the appropriate office. A combination of cameras, sensors and even facial recognition software may be used to track patients, visitors and staff. These smart technologies require sophisticated, powerful networks with highly reliable internet connectivity.

Delivery of care also relies on an array of advanced digital technology. The Internet of Medical Things (IoMT) can monitor vital signs, deliver drugs and regulate heartbeats. Drugs, blood products and medical equipment are tracked and assigned to patients through digital systems. EHRs are continually accessed and updated as the patient progresses through care. Medical scans are ordered and analyzed, sometimes using AI and other technology executed in the cloud to guide diagnostics.

Large healthcare networks now aggregate traffic from thousands of mobile devices and sensors. High-capacity internet and Ethernet connections give IT teams a scalable, reliable resource to manage new IoMT deployments and their escalating bandwidth requirements.

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### Big data

Many healthcare systems are looking to big data and predictive analytics to improve the quality and efficiency of care. For instance:

- Big data in the healthcare market was valued at \$27.4 billion USD in 2023 and it is projected to reach \$73.8 billion by 2030. That's a compound annual growth rate (CAGR) of 15.2% between 2023-2030.<sup>8</sup>
- Google Health is market testing an app, DermAssist, that has already shown efficacy in identifying over 80% of skin, hair and nail conditions seen in clinics and more than 90% of the most commonly searched conditions.<sup>9</sup>
- Google Health has also harnessed AI to accurately interpret retinal scans to detect diabetic retinopathy in diabetes patients. The solution was trained on over 100,000 de-identified retinal scans and validated by a team of ophthalmologists. This solution, called the Automated Retinal Disease Assessment (ARDA) is used to screen more than 3,000 patients a day.<sup>10</sup>

Managing these applications requires the ability to manipulate massive data sets and transfer information between remote computing facilities reliably and easily.

### The way forward

To capitalize on the promise of telehealth and digital medicine, IT leaders need solutions capable of supporting bandwidth-intensive applications across a complex, changing network topography. Here are some of the strategies that can transform your network:

#### Enhance performance of cloud platforms

Many healthcare systems rely on multiple cloud providers to manage their operations. With the right bandwidth capabilities, you can link to multiple private data centers and public cloud service providers from a single network connection using multi-cloud connection onramps.

#### Improve performance between applications and network users

A seamless WAN is critical to ensuring high performance for bandwidth-intensive applications like high-resolution imaging, virtual reality, real-time monitoring and robotics. Options for high-bandwidth connectivity will be crucial to support site-to-site data transfer as these applications grow.

#### Support business resilience

Private, high-capacity Ethernet connectivity to the cloud can help protect essential systems from external threats such as distributed denial of service (DDoS) attacks. If a system is disrupted, real-time replication across data centers and storage arrays can make your organization crisis-ready, while high bandwidth availability ensures that saved data can be restored rapidly.

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### Improve performance as care moves online

Clinicians often tap into your network from satellite offices and remote locations. A high-capacity network enables faster and more secure internet access for those end users when they go through the network firewall or use the centralized internet connection. It also allows for traffic aggregation that can make internet solutions more cost-effective.

### How Spectrum Enterprise can help

To address your growing bandwidth needs, our latest network enhancements make it easy, fast and cost-effective to access high-capacity circuits. We can deliver speeds of up to 100 Gbps for these services:

**Fiber Internet Access:** Enjoy fast, symmetrical dedicated internet access over our private fiber network with 100%, 24/7/365 U.S.-based support and industry-leading service-level agreement (SLA) that includes a 100% uptime guarantee.\*

**Ethernet:** As a top carrier of Ethernet services in the U.S., we can provide a secure WAN solution with low latency to support large volumes of critical data.

**Wavelength Services:** Our dense wavelength division multiplexing (DWDM) technology ensures high-speed data transfer with very low latency over a dedicated point-to-point connection.

Our connectivity services are tailored to your unique needs. We can support the most complex and demanding healthcare applications, from data-dense research and secure data encryption to virtual medicine and IoMT.

\*100% service uptime SLA applies only to Fiber Internet Access and Ethernet Services.



No matter how advanced your requirements or how distributed your healthcare network becomes, we can provide real-time connectivity between facilities, data centers and storage arrays, and quickly and easily scale your connectivity to support needs like internet traffic aggregation, business continuity planning and large-scale WANs.

Discover how Spectrum Enterprise can help you meet the network bandwidth needs of your healthcare organization.

[Learn more](#)

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#### About Spectrum Enterprise

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