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INFOBRIEF

# Private Optical Networks for Modern Healthcare

ePlus and Ciena help healthcare organizations build secure, high-performance networks for always-on care, bandwidth-intensive applications, connected locations, and AI-driven transformation.

Healthcare organizations are under pressure to keep clinical operations always on, move large medical datasets quickly, protect sensitive data, and connect care across multiple locations. AI adds urgency to those demands.

But as digital and AI-enabled tools move from proof of concept into production, a critical gap is emerging: the applications may be ready, but the underlying infrastructure often isn't. This is especially true in healthcare, where medical imaging, virtual care, cloud platforms, cybersecurity requirements, and AI workloads increasingly compete for network, compute, and storage resources. The consequences can be significant. An AI model or digital application that performs well in a controlled environment but struggles under real-world conditions can slow clinical and operational workflows, limit scalability, and ultimately erode the trust needed for successful adoption.

## The Infrastructure Challenge

Healthcare workloads are increasingly latency-sensitive, bandwidth-intensive, distributed, and demand absolute security at every layer. AI raises the stakes, but the pressure is already showing up across imaging, documentation, monitoring, analytics, and care delivery.

**Sensitive clinical and research data moves across hospitals, clinics, cloud platforms, and partner environments.**

**A radiologist reviewing AI-flagged imaging may be working from a regional site.**

**Ambient documentation tools generate inference requests with every patient encounter.**

**Remote monitoring platforms push data between edge devices, cloud environments, and clinical systems around the clock.**

This means the network must be fast, low latency, resilient, and reliable in every location, with unpredictable workloads, all the time. It also needs to automatically prioritize high-value workloads as AI, imaging, monitoring, and clinical applications compete for capacity. The moment performance becomes inconsistent across sites, the ripple effects hit clinical operations directly.

## Why This Matters

Organizations that treat the network as a background concern risk disruptions that can directly affect clinical care and patient satisfaction. As patient data, medical imaging, connected medical devices, virtual care, and AI applications increasingly depend on reliable network performance, delays or degraded performance can slow clinical workflows, limit access to critical information, and diminish the patient experience. Ultimately, a strong network foundation is essential to delivering timely, connected, and efficient care.

The healthcare organizations that are positioned for success are those building network foundations that can keep pace with the demands of modern clinical workloads—helping clinicians spend less time dealing with technology and more time focused on patients.

# Four Use Cases Driving Healthcare Network Decisions

NETWORK REQUIREMENT

## 1. Diagnostic Throughput

### Keep imaging and analysis moving when volume spikes.

Medical imaging is one of healthcare's most clinically important and bandwidth-intensive workflows. As volume grows and AI expands into triage, prioritization, and backlog management, the network determines whether imaging keeps pace or becomes a bottleneck.

**Support high-throughput data movement between scanners, reading sites, cloud platforms, and AI processing environments without flinching under the load.**

## 2. Clinical Documentation

### Make ambient documentation reliable.

Ambient AI tools that listen during encounters and generate structured notes and billing codes in real time are becoming standard. But these tools only earn clinician trust if they work every time, in every exam room, at every facility. One bad experience can stall adoption while patient experience degrades.

**Sustain consistent, low-latency connectivity that clinicians never have to think about.**

## 3. Distributed Care and Escalation

### Keep care connected across every location.

When network performance varies across hospitals, clinics, ambulatory sites, and remote care environments, care teams can experience inconsistent access to critical information and applications. This variability can disrupt AI-enabled workflows, making automated alerts, clinical decision support, and escalation processes less reliable and harder for clinicians to trust.

**Deliver deterministic, secure performance regardless of where in the care ecosystem a workflow is running.**

## 4. Clinical Analytics and Research

### Move research and analytics data securely without competing with care delivery.

Research and population health analytics rely on securely moving large volumes of data across hospitals, clinics, departments, and other care settings. At the same time, these data-intensive workloads share the network with mission-critical clinical systems. The challenge is to provide the capacity and performance needed for analytics and AI without slowing clinical applications or affecting the delivery of patient care.

**Enable secure, high-capacity data movement while giving IT teams the visibility to monitor performance and anticipate issues.**

## Operational Impact

**Diagnostic workflows keep pace with patient volume.**

**Documentation tools earn enough clinician trust to become part of the daily workflow.**

**Care delivery remains consistent and secure across all sites and settings in the network.**

**Analytics run at scale without disrupting the clinical system.**

## Why ePlus + Ciena

As a Ciena Service-Accredited and Top Performer Partner, ePlus helps healthcare organizations design, deploy, validate, and optimize private optical networks over dark fiber. We pair Ciena's optical networking technology — including WaveLogic 6 coherent optics, the industry's first 1.6T platform — with advisory expertise, implementation experience, and lifecycle support to put it to work in your environment.

### Lower total cost of ownership

Better fiber utilization and energy efficiency significantly reduce long-term infrastructure costs compared to legacy approaches or carrier-dependent alternatives.

### Faster time to production

Validated network designs, integrated delivery, and hands-on enablement get your infrastructure live sooner, so network modernization and AI initiatives deliver value faster.

### Reduced risk

Lifecycle services and deep operational expertise protect your investment at every stage, from initial architecture through ongoing optimization, so you can scale confidently.

### Future-ready architecture

A network foundation built to scale with your organization supports both the workloads you're running today and those on the horizon.

e+ Where Technology Means More®

## Start With a Data Transport Analysis

We'll assess your current data flows and interconnect architecture, quantify the performance and efficiency opportunity, and help you build a path forward.

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**Contact us to schedule today.**