# Healthcare

Connected care from core to edge

COMMSCOPE®

# More than ever, the quality of your network drives your delivery of quality medical care

In hospitals, medical office buildings, and research lab facilities, the need for more responsive and intelligent networks has taken on a new sense of urgency. The ongoing trends of telehealth and expanded missions for information technology (IT) and operations technology (OT) departments at the point of care have accelerated to meet the unprecedented challenges of a global pandemic and its aftermath.

Going forward, the relationships between doctor, hospital, researcher and patient will rely on greater connectivity and the smarter collection and use of data to improve patient outcomes and operational efficiencies for providers—as well as to increase data security.

CommScope knows it takes a smart combination of simplicity, reliability and adaptability to meet all these challenges at once—and that's how we build our solutions for our private and government healthcare partners.

| Telehealth | Rising expenses | Data security |
|---|---|---|
| $56.47 billion in growth between 2020 and 2024, representing 19% CAGR | Globally, healthcare provider costs are projected to rise by 5.4 percent annually through 2022 | $29.7 million in fines for HIPPA noncompliance were levied in 2018—a record |
| Source: businesswire.com/news/ | Source: Deloitte 2019 Global Health Care Outlook | Source: hipaajournal.com |

# A better network empowers better patient experiences—and better patient outcomes

In any healthcare environment—from the largest hospital to a telehealth patient's kitchen table—everything relies on the fast, accurate and seamless movement and processing of information. Providers and medical professionals see enhanced connectivity as key to improved patient experiences and better outcomes.

• Enhanced connectivity empowers patients to take more ownership in their own care pathways

• Intelligence-driven data streamlines administration, freeing providers to focus more time with patients

• Availability of more tools and applications expands the ways to treat patients and improve outcomes

• Virtual ICU centers, telehealth capabilities, and in-room entertainment drive better patient experiences

## IT and OT must come together to drive enhanced capabilities and reduce operational costs

Rising expenses and flat (or nearly-flat) revenue growth have been concerns for years. Information technology (IT) and operations technology (OT) departments both have a role to play in empowering smarter operations—not only in the handling of information, but in the management of the facility itself. A robust, future-ready network infrastructure empowers both IT and OT to pull together for more efficient operations, lower OpEx and stronger margins.

- Convergent network infrastructure enables shared IT and OT networks to coexist on a common platform
- Smart-building capabilities streamline and economize security, HVAC and other systems
- Powerful network solutions allow providers to offer more services at little to no extra cost
- High-bandwidth architectures support high-demand departments like radiology and ensure total performance from the data center to the edge
- Stronger networks improve recruitment and retention for a stronger business model

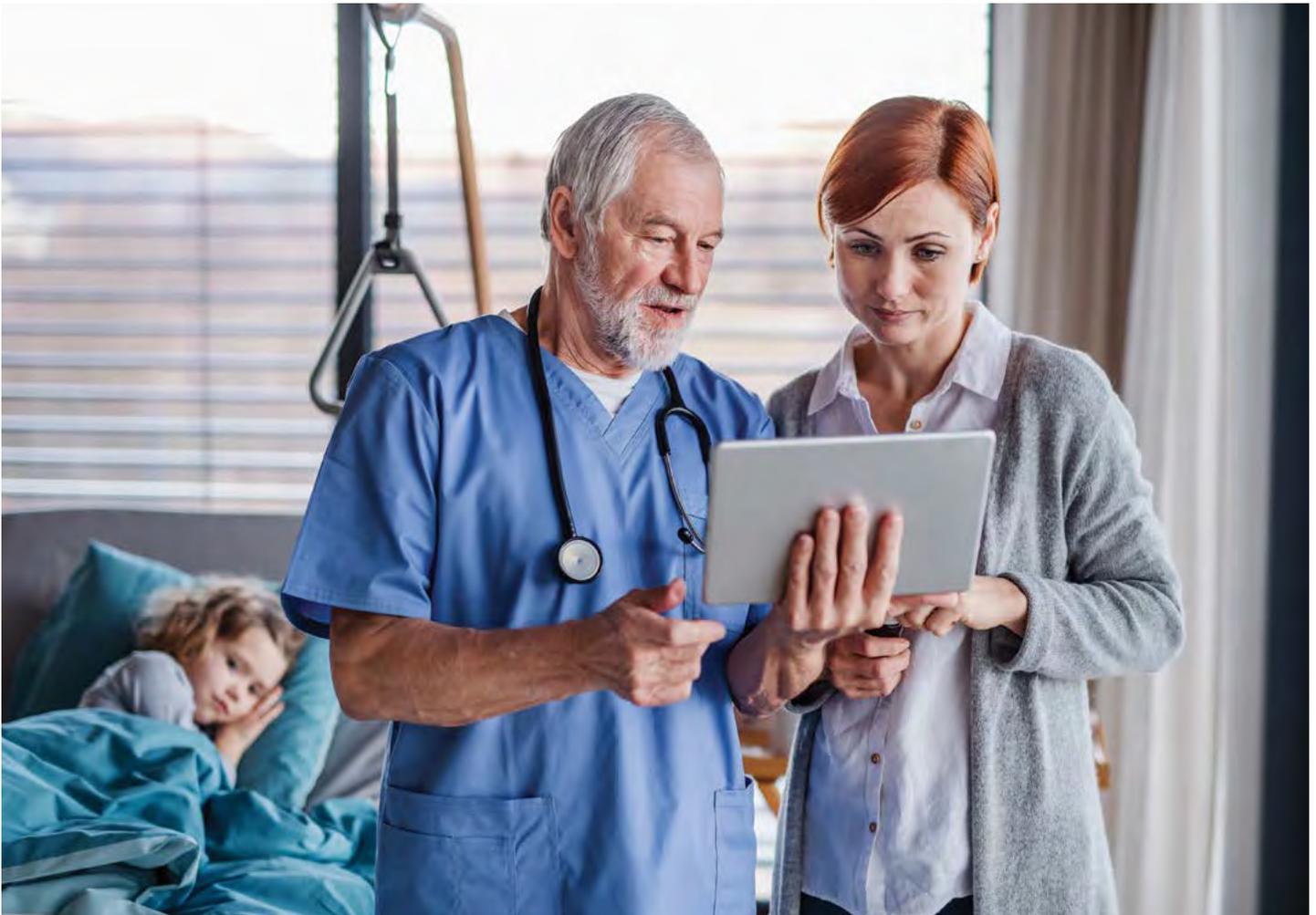## Safety, security and compliance matter more than ever

It takes a smart, reliable network to monitor every security need—from keeping track of patients in the building to safeguarding the massive amounts of data their care generates. Depending on your location, HIPAA, GDPR and HIMMS compliance is of paramount importance in protecting patient privacy, as well as your bottom line and reputation.

- High-performance wired and wireless networks power bed alarms and nurse call functions
- Intelligent automated infrastructure management (AIM) solutions monitor and secure every port connection in real time
- Converged network infrastructure empowers automated door security and video monitoring
- Patented dynamic pre-shared Wi-Fi key technologies that support 802.1x security with simplicity
- Private LTE networks via CBRS solutions that provide a secure, isolated wireless network
- Support for certified/compliant technologies like push-to-talk phones and patient location tracking
- In-building cellular systems help patients and visitors stay connected without accessing the facility's private networks

# An intelligent network infrastructure improves outcomes, operations and security at every level

Tomorrow's super-connected healthcare facilities offer almost unlimited opportunities to leverage universal connectivity—wired, Wi-Fi and indoor cellular—to build a stable mesh of services, applications and tools that serve as the foundation of your long-term network evolution.

From the smallest office to the most advanced research lab to the largest hospital campus, there are exciting new ways to improve care and improve operational efficiencies.

- · Site safety and security – parking lot cameras

- · Universal connectivity – personal devices, medical devices and wireless devices

- · Medical worker safety and patient safety – bed alert, nurse call, auto locking of the facility

- · Panic alarm/buttons

- · Infant protection system

- · Asset location tracking – such as locating mobile imaging devices

- · Inventory management RFID

- · Tele-health, wearables and remote patient monitoring

- · Building automation such as HVAC, power, card readers, video

- · IoT Integration

# A completely reimagined network depends on the CommScope's complete portfolio of network solutions

When you're considering your new or upgraded network infrastructure deployment, CommScope is there to help you think big—with solutions that enable you to achieve the ultimate in performance and efficiency across your entire operation.

· **Structured cabling** that converges your wired and wireless networks onto a single, simple infrastructure with performance that leaves you room to grow as new challenges and opportunities emerge

· **High-speed, low-latency fiber** that empowers remote surgeries and other advanced medical applications, while maintaining electrical isolation in sensitive work areas like operating rooms

· **imVision® intelligent AIM** solution that monitors network security in real time and reveals opportunities for operational efficiencies across your entire network

· **RUCKUS Wi-Fi access points (APs), switches and analytics** that provide reliable, consistent high-speed Wi-Fi access to staff, administration, patients and guests, using 30 percent fewer APs than other solutions require—plus the analytical insight to more efficiently manage the Wi-Fi network

· **ERA® in-building cellular DAS and OneCell® small cell solutions** that empower LTE and 5G connectivity in every room on every floor—and even across multiple buildings—all with a fraction of the head-end equipment needed for traditional DAS solutions

· **IoT-empowering network infrastructure** that unlocks the cost-saving efficiency and security of IoT capabilities, such as electronic door locks, security monitors, waiting room signage, HVAC and lighting controls, and more

· **RUCKUS CBRS secure small cell solution** that provides a private, secure LTE cellular network that is isolated from the macro cell network for superior indoor cellular security and control

# Patients benefit at every step along their healthcare paths

A CommScope-powered network infrastructure empowers a better patient experience at every level, in every interaction. It also empowers your own staff to deliver better care and realize better outcomes.

### CONSULTATION AND EVALUATION

A strong network powers easier adoption of telehealth consultations—potentially heading off complications that could lead to more involved treatment or hospitalization.

Catching issues early increases the likelihood that procedures can be performed on an outpatient basis, reducing costs to patients and making it possible for them to heal at home where their support system is strongest

### ADMISSION AND INPATIENT CARE

When a patient's condition requires admission, a strong healthcare network can help to eliminate confusion and delay. These measures can include enabling in-building wayfinding apps to help them find their destinations and cellular-based nurse calls, bed position, lighting, thermostat, menu selection and entertainment controls via smart device.

# IT and OT networks can work together to deliver a more efficient cost structure

A converged infrastructure that flattens wired and wireless technologies onto a single unified IT cabling standard unlocks new operational efficiencies and capabilities.

## THE TOTAL SOLUTION FOR TOTAL CONNECTIVITY FLEXIBILITY

CommScope's comprehensive portfolios of copper and fiber infrastructure provide both IT and OT stakeholders with a powerful range of options.

· **For IT,** it means high-bandwidth, high-speed fiber infrastructure that enables fast, dependable sharing of information across disciplines and departments when seconds count. It means efficient data centers that store and process vast amounts of data, and fully-leveraged AI capabilities that help doctors and nurses predict and treat patient needs.

· **For OT,** it means universal connectivity to all kinds of connected services and applications—from lighting to HVAC to access and inventory controls. It means PoE and powered fiber solutions that deliver the wattage and the bandwidth to power a vast ecosystem of remote devices, including those still coming to market.

· **For both,** it means a simple, economical common infrastructure that may already be in place across most of the target deployment, making it fast and easy to implement whatever functionalities are required—without overextending OpEx or CapEx budgets—and fully capable of supporting a wide range of connected devices and services.

## FREE MOVEMENT OF INFORMATION EMPOWERS DOCTORS AND NURSES

A ubiquitous network powered by CommScope solutions help ensure information flows freely, accurately and quickly so medical staff can make informed decisions based on reliable data and recall. It empowers them to do what they do best—with confidence—even if the data is processed and stored offsite or in the cloud.

## THE PERFORMANCE TO OFFER MORE FOR LESS

Fast, flexible network infrastructure solutions from CommScope make it economical to expand the kind of digital services your hospital, clinic or practice can offer to patients, staff and visitors. With a solid foundation of CommScope solutions, you really can do more for less, including:

· Enhanced telehealth capabilities

· Streamlined online registration procedures

· Improved access to remote video translation services

· Advanced A/V capabilities in waiting areas and patient rooms

· Cutting-edge VR- and AR-driven learning tools to expand staff competencies

· Mobile device-controlled window blinds, thermostats, lighting and more

As competition in healthcare continues to tighten, every advantage becomes more important. With CommScope powering your IT and OT network infrastructure, you can offer these differentiators with relatively modest investment.

# CommScope solutions empower a more secure, more fully-compliant healthcare environment

No healthcare provider can afford to neglect the importance of patient and staff safety, data security and rigorous regulatory compliance. Failure to fulfill any of these obligations can result in disastrous outcomes and steep fines—to say nothing of the potential cost to human life and health.

## PATIENT AND STAFF SAFETY

CommScope's comprehensive portfolios of wired and wireless networking solutions power patient bed alerts and nursery infant protection—enabling staff to prioritize response to ensure the most urgent needs are met first. Other safety services empower wander management and telemetry of vitals, all powered by the latest PoE and powered fiber solutions.

## FACILITIES AND DATA SECURITY

CommScope's solutions also enable better physical and data security. PoE and powered fiber solutions drive automated door access and keycard/RFID readers, as well as two-way audio communications (by VoIP or intercom) and video monitoring cameras.

Protecting the vast amounts of data generated, stored and processed by modern healthcare is just as important, and again CommScope solutions deliver where it matters most.

Our imVision intelligent AIM solution constantly monitors the network—tracking every port connection and alerting staff of any suspicious activity in real time. Likewise, our RUCKUS Wi-Fi solution offers patented dynamic pre-shared Wi-Fi key technologies that safeguard data from ending up in the wrong hands.

CommScope also offers an exciting new secure, private cellular network option in our RUCKUS CBRS solution—meaning your network can support its own secure LTE cellular network.

## STANDARDS COMPLIANCE

These security measures all help ensure your hospital or research lab remains in full compliance with your governing regulations, whether HIPAA, GDPR, HIMMS or other law. Violations can be costly, not only in the exorbitant fines, but in terms of reputation and trust. Patients and staff both need to feel that your organization is fully committed to their safety—and that of their private data. That trust, once lost, is very difficult to recover. CommScope can help keep you in compliance—and in good standing with those who trust you.

# Healthcare-level challenges call for CommScope-level solutions

When it comes to network infrastructure strategy, no one faces steeper challenges in their network infrastructure strategy than healthcare networks. With so many priorities, stakeholders, and regulatory commitments to satisfy, you need a complete, world-class solutions partner to help you design and deploy a new or upgraded network infrastructure to power your hospital, clinic, lab or practice into the future.

CommScope offers a complete portfolio of solutions you need to:

· Improve patient experiences and outcomes

· Drive IT and OT capabilities and cost reductions

· mpower safety, security and regulatory compliance

## IT'S ALL ABOUT MEETING KPIS ON EVERY FRONT

In the end, meeting your KPIs for patient outcomes, operations efficiency, and safety and security compliance maintenance all depend on your network. CommScope can help you deliver more proactive care, leverage remote monitoring and empower front-line community care that makes every effort more productive.

CommScope's infrastructure solutions can help you improve those outcomes, efficiencies and safeguards. Take the next step and consult with your CommScope representative today.

# CASE STUDIES

**Dezhou People's Hospital, China**
Challenge: Connect patients and visitors to more responsive, efficient healthcare delivery
Solution: CommScope's RUCKUS SmartZone Wi-Fi network controllers and 802.11ac access points

READ CASE STUDY

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**ITO Hospital, Japan**
Challenge: Improve security and performance in growing, high-density environment
Solution: CommScope's RUCKUS 802.11ac access points and ZoneDirector controllers

READ CASE STUDY

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**Shift Healthcare, Brazil**
Challenge: Improve research collaboration with a more powerful Wi-Fi network without draining IT resources
Solution: CommScope's enhanced-coverage RUCKUS 802.11ac access points and Virtual SmartZone controller

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**South Australian Health Medical Research Institute (SAHMRI)**
Challenge: Build a fast, flexible cabled network to keep up with research-level demands
Solution: CommScope's SYSTIMAX® 360 copper and fiber infrastructure and iPatch® intelligence

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**Erickson Living, USA**
Challenge: Deliver breakthrough Wi-Fi and Internet connectivity to increasingly tech-savvy seniors
Solution: CommScope's FTTx portfolio of gigabit passive optical networks, RapidReel fiber, hubs and terminals

READ CASE STUDY

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**Loma Linda University Hospital, USA**
Challenge: Improve indoor cellular service to improve doctor responses and patient experiences
Solution: CommScope's unified, flexible digital wireless infrastructure platform, ERA®, running on standard Category 6A copper.

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**Maxima Medical Center, Netherlands**
Challenge: Find a better way to inventory and track movement of vital medical equipment
Solution: CommScope's imVision® intelligence tracks and reports each item's location by its MAC address

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**AmerisourceBergen, USA**
Challenge: Deploy network to support security cameras and emergency phones in a new parking structure
Solution: CommScope PoE and powered fiber infrastructure powered it all and reduced solution footprint.

READ CASE STUDY

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com

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