

UC Davis Health Case Study



About UC Davis Health

Situated on a 144-acre campus in Sacramento, California, UC Davis Health serves a 65,000-square-mile area that includes 33 counties and six million residents across Northern and Central California. The 625-bed acute-care teaching hospital admits more than 30,000 patients annually and handles nearly one million visits. UC Davis Health offers primary care for all ages, specialty care in 150 fields, and the latest treatment options and expertise for the most complex health conditions.



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Group

PANDUIT[®]

infrastructure for a connected world



Company
UC Davis Health

Country
USA, California

Industry
Healthcare

Business Challenges

Support new technology that is being used in the rapidly changing treatment and care of patients, with a future forward infrastructure.

Panduit Solution

- PatchRunner™ 2 Enhanced Vertical Cable Managers
- High Density Patch Panels
- High Density Horizontal Cable Managers
- QuickNet™ Plug Pack Housings
- 28AWG Category 6A Copper Patch Cords
- HD Flex® Fiber Solutions (enclosures, cassettes, and OM4 fiber trunk assemblies)
- QuickNet™ High-Density Fiber Optic Cassettes
- Opti-Core® Push-Pull Fiber Optic Patch Cords
- Turn-Tell® Labels
- Grounding and Bonding Solutions

General Cable Solution

- GenSPEED® 10 MTP™ Small Diameter Category 6A Cable
- GenSPEED® Singlemode Fiber Cables from 12 strand to 288 strand fiber cables

Business Benefits

Network upgrades over the past 14 years have positioned UC Davis to meet critical needs of the community, with optimized building operations and state-of-the-art patient care.

Upgrading Networks to Drive Technology-Enhanced Patient Care

PanGen solutions enable UC Davis Health to optimize its building operations while delivering state-of-the art, award-winning patient care

Business Challenges

Nowhere is the rapidly expanding role of technology more apparent than in healthcare. Testing equipment can deliver almost-instantaneous results, which staff can access from anywhere within the medical system, providing split-second diagnoses and critical care. Sensors and wearables track everything from patient vitals and locations to discharges, alerting nurses when a patient needs care or the admissions office when a bed is available for an incoming patient. Surgical robots help doctors perform life-altering surgeries while specialists around the world can watch via video, offering guidance. Patients and doctors chat via video platforms rather than face-to-face. And the list goes on and on.

UC Davis Health is at the leading edge of this shift, changing patient treatment and care through the use of technology. The changing face of healthcare drives a need for IT services, infrastructure, and applications to support these technologies.

Beyond patient care, growing demands for wireless connectivity and connected building systems required an always-on infrastructure that could support hospital facilities. This robust foundation is needed to support network needs for today and looking forward.

“Technology should make patient care more convenient, at lower costs, and free up our health care team members so they can focus even more on providing a human touch to care delivery.”

Strategic Objectives

At UC Davis, IT is a strategic business partner in helping improve the quality of care provided through an increasingly technological world. IT Facilities Data Center Supervisor Lopaka Gaspar said all the improvements the hospital is making to its infrastructure and IT systems is focused on ultimately improving patient care. “Technology should make patient care more convenient, at lower costs, and free up our health care team members so they can focus even more on providing a human touch to care delivery,” Lopaka says.

Additionally, the hospital wanted to enhance its facility operations through data. With more than 100 buildings in the healthcare system, the hospital wanted to collect the right data at the right points. This would allow them to improve patient flows, track medical equipment, improve staffing, and more, with a goal of optimizing their operations.

Other key objectives for UC Davis’ IT Infrastructure Facilities and Auxiliary Services, and Data Center Services groups were to meet growing demand to support Wi-Fi applications and Power over Ethernet, as well as stay current with standards advancements, codes, and hospital policy changes.

PanGen Solution

Panduit and General Cable have a relationship with UC Davis that extends back more than a dozen years and through hundreds of projects, both big and small, ranging from new buildings to renovations.

Over the years, the cabling solution evolved from a minimum compliant Category 6 to enhanced Category 6 to Category 6A. Today, UC Davis systems are built on GenSPEED® 10 MTP™ Small Diameter Category 6A Cable from General Cable. Each cabling evolution was done to keep up with PoE and wireless technology. When wireless technology changed from WAVE 1 at 1 gig transmission to WAVE II, transmitting at 2.5/5/10 gig, UC Davis upgraded to GenSPEED® 10,000 (Purple) for all wireless access points to handle the higher speed requirements. The organization has now standardized on GenSPEED® 10 (Purple), which not only accommodates PoE++ and the latest Wi-Fi technology, but also has the smallest diameter available in a Category 6A cable (0.230”), saving space in pathways and conduits.

From the Panduit side, Category 6A connectivity – including jacks, patch cords, patch panels, and plugs – throughout the channel ensures reliable 10GBASE-T performance. Field term plugs are used extensively throughout the hospital, providing fast and easy connections for devices like wireless access points and security cameras.

This 10GBASE-T infrastructure ensures that UC Davis will be able to meet its needs for all future Internet of Things (IoT) devices as facilities are built or renovated.

Throughout the system, UC Davis is supported by four data centers (one on-premise and three multi-tenant data centers) and more than 250 telecommunications rooms. The campus has more than 70,000 cable drops, which means 140,000 Panduit connectors, and more than 12 million feet of cable from General Cable – more than 2,300 miles.

Telco rooms are optimized to allow most efficient use of space, using Panduit PatchRunner™ 2 Enhanced Vertical Cable Managers, which allow patching in the cable manager, paired with high density patch panels and 28 AWG patch cords, and high-density horizontal cable managers. This combination of products consolidates patching and cable management to free up rack space for other equipment. QuickNet™ Plug Pack Housing speeds installation of patching solutions.

Various General Cable GenSPEED singlemode fiber cables serve as the communications backbone, connecting the TRs to the data center.



Business Benefits

The 10GBASE-T infrastructure is helping the hospital meet critical needs. “Our clinicians are our consumers of the technology we provide,” Gaspar says. “Their experience – be it positive or negative – is important to us. We are always trying to improve their experience through how applications and services are accessed: via mobile devices, web interfaces, and ease of use.”

Today, UC Davis collects a wealth of data about equipment and medical orders, patient flow, length of stays, and more. Mining that data in a constructive way allows the hospital to provide better services and improve patient care.

At the same time, the hospital is challenged to manage and protect that data. HIPAA regulations require that data is kept confidential and secured, however, it also needs to be accessible to those charged with patient care, so they have all needed information at their fingertips. For UC Davis, they are continually balancing that security and accessibility with managing the costs of storing data and planning for growth and control.

Beyond the technology that is supported by the infrastructure, Gaspar says he is vigilant about choosing solutions that are simple to install and maintain. “It’s not just the engineer that you keep in mind,” Gaspar explains. “It’s the operations staff also. I always imagine, if I get a call to replace something at 3 a.m., what would I want to see.”

For UC Davis, these technology upgrades and additions have contributed to accolades throughout the region and the country. The hospital is consistently recognized for its performance. US News & World Report ranked UC Davis as one of the nation’s best hospitals in ten adult medical specialties in its most recent survey.

UC Davis placed at the highest level in the annual CHIME “Healthcare’s Most Wired” survey, which recognizes the use of information technology by healthcare provider organizations. UC Davis was one of three California hospitals to achieve the award in 2019, and it marked the eighth time UC Davis has earned the distinction.

“This recognition highlights UC Davis Health IT as a leader in the health care information technology industry and validates the investments and designs of our IT systems, improving outcomes for our clinicians and patients,” Gaspar says.



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