

New Colorado Hospital Creates Network from the Ground Up to Help Patients and Caregivers

Poudre Valley Health System relies on its Cisco Medical-Grade Network to provide state-of-the-art patient care without sacrificing safety or security.

| EXECUTIVE SUMMARY |
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| <p>POUDRE VALLEY HEALTH SYSTEM</p> <ul style="list-style-type: none"> • Healthcare • Fort Collins, Colorado • 3,100 employees • Licensed Capacity: 430 beds |
| <p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Create a new, technologically-advanced medical facility for a growing regional patient population. • Innovating IT enablement to maximize the patient-caregiver experience and provide world-class healthcare. |
| <p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • Cisco Medical-Grade Network allows wireless caregiver access from anywhere within the hospital to keep health records updated. • A paperlight hospital allows for safer bedside medicine verification and remote doctor diagnosis and prescription. |
| <p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • PVHS hospitals run efficiently at 95 percent capacity, which is significantly higher than the national average. • Cisco's Medical-Grade Network enables process reengineering to provide better and cost-efficient patient services. • Cisco and partner MSN Communications created innovative new designs and new technologies to help provide full redundancy across the network. |

Business Challenge

Northern Colorado is experiencing a population boom. As one of the premier healthcare facilities in the region, Poudre Valley Hospital, located in Fort Collins, realized that they would not have the space to meet the demands of the growing population. A shortage of beds demanded a second acute-care facility, and one that would be conveniently located to serve areas of greatest growth.

Poudre Valley Health System (PVHS) decided to build a new hospital in Loveland, to be called Medical Center of the Rockies (MCR). For the new hospital, PVHS wanted to create a type of network that had never existed before—one that would support the latest clinical technologies with high-level security and robustness, and provide caregiver mobility. Many of the services provided at Poudre Valley Hospital, such as Level II Trauma Care and cardiovascular services, needed to move without any interruption to the new hospital.

What was also needed was a way to free caregivers from their traditional stations, and allow them to access patient records from anywhere inside or

outside the hospital, at any time. When bad weather hits in Colorado, people can be snowed in for days. But patients still need to be diagnosed and treated.

“The ability to have a functioning network that works all the time is essential for us to provide world-class care,” says Fernando Pedroza, Poudre Valley’s Director of Technical and Security Services.

Network Solution

With one of the largest fiber rings in the region provided by the Platte River Power Authority, there was a rare opportunity to make MCR into a one-of-a-kind health care facility.

Cisco and its Cisco-certified Gold partner, MSN Communications (an industry-leading provider of LAN, WAN, security, wireless, storage and IP telephony solutions) were chosen to help make the PVHS vision a reality because of their willingness to create something that was truly different. “We

are very fortunate that Cisco stepped up very early in the process as we were looking for a partner,” says Russ Branzell, CIO of PVHS.

Utilizing their already-established relationship with PVHS, MSN Communications designed and implemented key Cisco data services in the new facility and connected them with numerous clinics throughout the Fort Collins area. By installing and operating its Medical-Grade Network over dual-path fibers, the new MCR now has many redundancies in place to ease potential disaster recovery efforts. MCR is designed and built to be an essentially paperlight system, pushing through large amounts of data and images round-the-clock.



A system as unique as this takes time to plan and build, and the PVHS staff and MSN Communications spent nearly four years conceptualizing the network needs for the facility. The ability to grow incrementally, without having to tear walls down or to recable areas of the hospital if a new wing or a new floor is needed, is critical. “As a technical person, it is a dream to be able to design something that will be here for 50 or 60 years in the future,” says Pedroza.

One key aspect of the network is that it allows virtually unlimited wireless access throughout the hospital. Three levels of wireless are in place—with three levels of security—to caregivers, physicians, patients, families and vendors.

Using VLANs, the MSN-designed Cisco network solution allows segregation without compromising the security of certain data areas that need to be better protected.

When MCR opened in February 2007, mobile nurse stations had the ability to provide accurate medication administration by using barcode scanners to make sure that the right patient is being given the right dose at the right time. “We have lives entrusted to us. And in every conceivable way, we have to make sure that this is as reliable as anything we have,” says Branzell.

While at the hospital, patients will be able to use a system called the GetWell Network, which turns their television screens into a network interface. This will allow online access to patient education information, as well as the ability to provide real-time feedback to hospital staff, in addition to a full complement of entertainment services. “It just gives them a little bit more of a sense of control over their own lives at a time when they probably do not feel like there is that much control,” says George Hayes, CEO of the Medical Center of the Rockies.

The nurse call system will contact a caregiver wirelessly, rather than calling out to a central desk and then having the unit nurse track down who is responsible for an individual patient. “It makes for much more efficient care and better communication between the patient and the caregiver than we would have ever have been able to do in the past,” says Hayes.

PVHS has also spent several years developing a truly state-of-the-art electronic health record to provide the best current information—not just for the caregiver at the hospital, but also for the entire continuum of care when patients go back to a physician's office, when they go to a specialist, or if they need to return to the hospital. The electronic health record is also available online when a patient returns home.

The network also monitors building systems like temperature, humidity, and air exchanges, to make sure that the energy efficiency of the new facility is maintained.

Business Results

The huge investments that PVHS has made are helping ensure that it is benefiting from the latest advances. According to Branzell, Cisco and MSN actually created unique technology innovations to provide a fully redundant optical network.

It is clear that Cisco's network has achieved remarkable results. Poudre Valley Hospital runs efficiently at 95 percent capacity. Many hospitals around the country begin to strain their services and staff when approaching 75 percent.

Certain procedures, such as patient information intake forms, now take half the time. Patient safety has also improved with better medicine verification. Physicians can have image studies taken in the hospital sent to their homes, and make diagnoses and recommendations for treatment. “Wireless technology allows us to have information at the point of care, or at our point of review, essentially instantly. And concurrently with how many other providers need that information,” says Karen Dawson, Poudre Valley Hospital's Director of Medical Specialty Services.

PRODUCT LIST

- Cisco Catalyst 6500 Series Switches
- Cisco Unified Call Manager
- Cisco Unity Unified Messaging
- Cisco Unified IP Phones 7900 Series
- Cisco Unified Survivable Remote Site Telephony
- Cisco VG200 Series Gateway
- Cisco Aironet 1100 Series Access Points
- Cisco Wireless Control System
- Cisco Wireless Location Appliance
- Cisco Catalyst 6500 Series Wireless Services Module

To offer PVHS the latest in VoIP technology, MSN installed more than 1200 Cisco IP phones, providing the hospital with the flexibility to troubleshoot in a more uniform way, communicate between different facilities without having to pay long-distance costs, and save valuable working area where there is not a lot of space. These investments are paying off in coordination of systems, as well as in maintenance and support costs.

Not only is there a high quality of care, but PVHS is able to provide some of the lowest health care costs

in Colorado. “We want to make sure that we have every efficiency that we can in the entire process of care. We do not want this information just here. We want our improved patient care for our patients first, then within our region and then even nationally,” says Branzell.

And as the new Medical Center of the Rockies opens, it aims to be a model for all healthcare facilities nationwide.

For More Information

To find out more about the Cisco Medical-Grade Network, visit
http://www.cisco.com/web/strategy/healthcare/all_medical-grade.html.



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