

## Rehabilitation Hospital Improves Clinical Efficiency and Patient Care

Sheltering Arms Hospital uses Cisco Unified Wireless Network to enhance staff productivity and improve the hospital environment for patients.

EXECUTIVE SUMMARY
<p><b>SHELTERING ARMS PHYSICAL REHABILITATION HOSPITAL</b></p> <ul style="list-style-type: none"> <li>• Healthcare</li> <li>• Richmond, Virginia</li> <li>• 500 employees</li> </ul> <p><b>BUSINESS CHALLENGE</b></p> <ul style="list-style-type: none"> <li>• Extend clinical applications and information wherever they are needed</li> <li>• Improve hospital healing environment by eliminating excess noise</li> <li>• Increase staff efficiency and productivity</li> </ul>
<p><b>NETWORK SOLUTION</b></p> <ul style="list-style-type: none"> <li>• Deployed secure, flexible wireless network to support clinical and administrative applications</li> </ul>
<p><b>BUSINESS RESULTS</b></p> <ul style="list-style-type: none"> <li>• Increased responsiveness and efficiency of clinical caregivers</li> <li>• Improved productivity of administrative staff</li> <li>• Enhanced patient care and satisfaction</li> </ul>

### Business Challenge

Sheltering Arms Physical Rehabilitation Hospital, a network of nine inpatient and outpatient rehabilitation facilities around Richmond, Virginia, is the epitome of the forward-looking healthcare provider. The organization has relied on IP technologies to lower costs, boost efficiency, and improve communications for many years.

“We recognize that technology has come to the forefront as a way to improve care while reducing costs and making the system as a whole more effective,” says Travis Gathright, director of Management Information Systems for Sheltering Arms. “Sheltering Arms has a long history of providing excellent care, and we are always looking for ways that technology can help us do even better.”

By 2006, however, Sheltering Arms was facing new technology challenges. The organization was preparing to roll out a new clinical documentation system that would dramatically reduce reliance on paper records, allowing clinical staff to share information more easily and to spend less time filling out paperwork and more time with patients. However, to take full advantage of the new system, Sheltering Arms needed to be able to extend access to clinical staff wherever they might be.

“Making sure that we have all of the patient’s documentation together is very important for an interdisciplinary approach to care,” says Gathright. “However, we are a rehabilitation hospital, so our staff is not just in a patient’s room. There is a lot of therapy work in gym areas, in our heated pools, and we needed to extend access to those areas as well.”

Sheltering Arms leaders also wanted to improve the patient experience at the organization’s two inpatient hospitals by reducing excess noise and creating what clinicians refer to as a “quiet hospital” environment.

“The atmosphere in a ‘quiet hospital’ is much more relaxing and conducive to healing than a hospital where overhead pages are heard frequently,” says Cheryl Lee, associate vice president of Inpatient Services, Sheltering Arms. “Overhead paging is distracting, interrupts rest, and is just plain noisy in comparison to hospitals using wireless phone systems.”

## Network Solution

To provide the widespread access to the new clinical documentation system that clinical staff required, as well as to support a new nurse paging system at larger sites, Sheltering Arms needed a highly flexible, manageable wireless network. To protect patient confidentiality and help ensure compliance with U.S. regulations such as the Health Insurance Portability and Accountability Act, the system also needed to be extremely secure. After reviewing several possible options, Gathright chose the Cisco® Unified Wireless Network Solution, part of the Cisco Medical-Grade Network.

The Cisco Medical-Grade Network provides a highly responsive and trusted environment for securely sharing vital healthcare information. It improves interactions among stakeholders throughout the entire healthcare community by delivering the right information, to the right people, at the point-of-need. As part of the Cisco Medical-Grade Network infrastructure, a Cisco Unified Wireless Network provides access to critical information at the point-of-need with a scalable, cost-effective solution. The Cisco Unified Wireless Network delivers mobility, security, and instant access to data applications which can help healthcare organizations accelerate responsiveness, increase productivity, and improve the quality of care provided.

Sheltering Arms already had a Cisco Medical-Grade Network LAN and had previously deployed Cisco IP communications solutions to provide voice services at its facilities. This experience with Cisco played a major role in the decision to choose Cisco again for the wireless solution.

“Cisco had been there to support us throughout our previous implementations, and it seemed like a natural progression to work with Cisco when we were ready for wireless,” says Gathright. “We evaluated the Cisco solution against other wireless technologies, and it was the most scalable, most secure, and most manageable product that we could find.”

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—Travis Gathright, director, Management Information Systems, Sheltering Arms

Sheltering Arms worked with the organization’s longtime technology partner, Cisco Certified Partner Packet360. Packet360 has deployed Cisco wired and wireless solutions for many years, and has won multiple awards from Cisco for its expertise and customer service, including being named “Technology Excellence Partner of the Year for Unified Communications and Security” in 2007. Packet360 helped Sheltering Arms deploy the Cisco Unified Wireless Network Solution across the enterprise in preparation for the rollout of the clinical information system. At the two inpatient hospitals, the organization also deployed a quiet nurse paging system based on the Cisco wired and wireless voice network.

Sheltering Arms used Emergin software to integrate the Cisco IP communications system with the organization’s Rauland nurse call system, allowing nurses to receive alerts and call back patients directly using Cisco wireless IP phones. The solution also integrates with the hospital’s IPcelerate IP telephony application to provide paging and 911 alerting. The fact that Sheltering Arms already used a Cisco IP voice system made adding the new paging solution a relatively simple proposition.

“When we opened our new hospital in November 2005, we built it with a Cisco Unified Communications solution,” says Gathright. “We then added the wireless network, added some Cisco 7920 Series wireless IP phones, did some integration work with our nurse call system, and we had a quiet hospital.”

Thanks to the deployment and management features of the Cisco Wireless Control System,—as well as the expertise of Packet360 integrators—deploying the wireless network at all Sheltering Arms locations was a smooth process.

“The management tools show you exactly where the coverage is,” says Gathright. “If there is any interference or any other issues, you can see exactly what is happening and where the problem is. On top of that, Packet360 was with us through the whole process. They were very helpful, very responsive, and they have a very high level of expertise.”

## Business Results

Today, clinical and administrative staff throughout Sheltering Arms use the Cisco Unified Wireless Network Solution every day. Clinicians access the clinical information system through wireless-enabled laptops affixed to mobile carts. The solution allows them to document information wherever they happen to be—from the bedside to the therapeutic poolside. Caregivers can work more efficiently and more easily comply with patient data regulations.

“The new clinical documentation system and the Cisco wireless network add value to Sheltering Arms in many areas,” says Jose Vivaldi, director of Outpatient Therapies, Sheltering Arms. “First, it instantly consolidates patient information at the fingertips of those who are providing care. This speeds up their response time when delivering vital care to patients throughout the Sheltering Arms continuum. Patient service is improved via the accessibility of critical patient information. Point-of-care documentation also benefits Sheltering Arms through improved productivity, compliance to the many guidelines that drive our service delivery model, and the ability to accurately capture patient charges.”

### PRODUCT LIST

#### Routing and Switching

- Cisco 2800 Series Integrated Services Router
- Cisco Catalyst® 3750 Series Switch
- Cisco Catalyst 3560 Series Switch

#### Voice and IP Communications

- Cisco Unified Communications Manager (formerly CallManager)
- Cisco Unity Voice Mail
- Cisco Unified Contact Center Enterprise
- Cisco Unified IP Phone 7900 Series
- Cisco Unified Wireless IP Phone 7920 Series

#### Cisco Unified Wireless Network

- Cisco 4400 Series Wireless LAN Controller
- Cisco Wireless Control System
- Cisco Aironet 1240 Series Access Points

The system also makes an immediate impression on Sheltering Arms patients, letting them know that they are being cared for in a state-of-the-art medical facility.

“In the past, documentation rarely occurred in the presence of the patient,” says Vivaldi. “Maybe a few notes were jotted down, but it was not until later that the information was placed in the medical record. Now, patients see the clinician putting their responses and performance into a device immediately following the rehabilitation activity.”

At the inpatient facilities, the wireless nurse paging systems also have had a profound effect on the healing environment by eliminating the constant

noise of overhead pages. The wireless IP voice solution is also helping clinicians provide more efficient, responsive patient care.

“Today, when a caregiver places a call to a physician, the physician can call back directly to the caregiver’s wireless phone, without having to be put on hold while the caregiver is paged,” says

Lee. "In addition, when patients push the nurse call button, they are able to directly communicate with the nurse or the nursing assistant assigned to their room, with no in-between person relaying messages. If the patient needs a blanket or a pain pill, the nursing staff can answer the nurse call and get what the patient needs before entering the patient's room. This saves the nurse's time and helps patients get what they need more quickly."

With every Sheltering Arms facility equipped with the Cisco wireless network, the benefits of mobile access to information are extending far beyond clinical staff.

"For the administrative employees on our campuses, the way that we conduct meetings and collaborate has really changed," says Gathright. "People can take their laptops to meetings, we can share project management applications together, and it has just made us more productive in general. We used to say, 'I will do that when I get back to my desk,' but now you can just take care of it."

### Next Steps

The Sheltering Arms technology team is exploring several new applications that would further extend the advantages of the wireless solution. In the coming months, Sheltering Arms will deploy wireless guest Internet access services in all waiting rooms and in patient areas of the inpatient hospitals. Gathright is also considering expanding wireless voice services to more staff to improve communications.

"At Sheltering Arms, patients come first," says Gathright. "There are many more things we can do to support our clinical staff in the goal of providing the best possible therapeutic outcomes. We have a mobile group of clinicians and our vision is for them to be able to quickly and securely access all of the information they need, when and where they need it. Regardless of what we do next, I am very confident in the wireless solution we have deployed. The Cisco platform will play an important role for us going forward."

### For More Information

To find out more about the Cisco Unified Wireless Network Solution, visit:

<http://www.cisco.com/go/unifiedwireless>.

To find out more about Cisco Healthcare solutions, visit: [www.cisco.com/go/healthcare](http://www.cisco.com/go/healthcare).



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