Mobility Solutions for Healthcare:
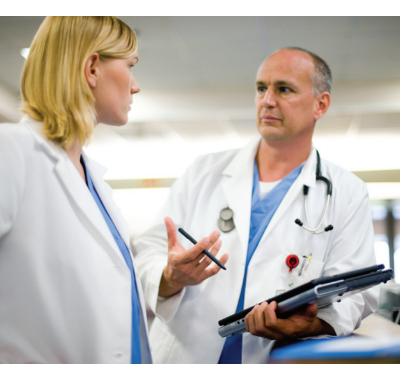Voice, Text, Images, and Information, Delivered to the Point of Care

Mobility Solutions for Healthcare:
Voice, Text, Images, and Information, Delivered to the Point of Care

Provide caregivers with access to patient information, hospital services, and each other, from any location—inside or outside the hospital walls.

Executive Summary

In dynamic healthcare environments, caregivers, patients, and equipment are constantly moving. To be productive, caregivers need the ability to reach each other and securely access information and services from wherever they happen to be. Cisco® Mobility solutions, based on Cisco wireless and unified communications products and technologies, help improve healthcare delivery by providing secure wireless, mobile care applications, and context-aware services. By enabling mobile staff to obtain information and collaborate from any workspace, Cisco Mobility solutions enable better-informed decisions; more cost-effective healthcare services; increased staff productivity; and an improved standard of patient care.

Cisco Secure Wireless: Extend the Network to the Point of Care

A primary care provider receives a patient call at home. Lacking access to the patient's electronic health record, the provider resorts to prescribing a broad-spectrum medication with the fewest potential adverse reactions—often not the most effective or economical option. Later, at the patient's bedside, the provider wants to compare treatment options. Unfortunately, she will not have time to visit the hospital library until much later in the day.

For today's mobile caregivers, the workspace can be anywhere— the point of care, hospital corridor, or at home. And yet, nurses and doctors typically can only access information from the nursing station or physician's office, using a stationary computer with network access. Constantly going back and forth to these network connection points erodes productivity, causes fatigue, and can delay care.

Hospitals around the world are securely extending the network to the point of care by integrating Cisco Secure Wireless into their Cisco Medical-Grade Network infrastructure. Cisco Secure Wireless enables healthcare organizations to confidently deploy mobile applications and services such as electronic health records, decision support, e-prescribing, and e-research. In addition, Cisco Secure Wireless provides the wireless foundation needed to deploy mobile care applications and context-aware services. With Secure Wireless, mobile caregivers can access information and order services from wherever they happen to be, using notebook computers, tablet PCs, wireless IP phones, and new dual-mode phones, which can connect over either the hospital's WiFi network or cellular networks.

Cisco Secure Wireless Solutions help healthcare services become more efficient:

- Physicians on rounds can use their wireless laptops to update patient charts and provide dictation. Updates are immediately available to other staff members, helping to ensure that decisions are made based on up-to-date patient information.
- Dieticians, nurses, and therapists can check orders, keep track of special needs, and review test results using wireless tablets.
- Patients no longer need to wait in line to be registered. Instead, a roaming registration clerk brings a wireless tablet to the patient in the lobby or Emergency Room. Patients who need immediate treatment can even be registered at the bedside after receiving critical care.

Hospitals that deploy Cisco Secure Wireless can be confident that patient information is protected in compliance with regulatory requirements, and that hospital staff experience reliable performance:

- Information privacy: All information is encrypted as it travels over the wireless network, as required by regulations such as the U.S.

Healthcare Insurance Portability and Accountability Act (HIPAA) and similar rules in other countries.

· Information integrity: Cisco Secure Wireless Solutions protect information such as prescription dosages from accidental or deliberate alteration as it travels over the wireless network.

· Network access control: Before providing access to services, the network validates that the user is authorized to access the network and the specific application, and that the user's device conforms to the hospital's security policy for required security software and settings. If laptops are missing software or are not configured properly, the system automatically performs remediation, without any action by the doctor or nurse.

· Performance and reliability: Cisco Secure Wireless Solution constantly adapts as people connect to the network from different areas of the hospital. This helps ensure an excellent end-user experience.

Hospitals can use the same Cisco Secure Wireless network to provide secure guest access for patients and visitors who want to learn about hospital services or to browse the Web. The network keeps guest traffic completely separate from all other hospital information to preserve the security of the hospital data.

Benefits of Cisco Secure Wireless
· Enables hospitals to confidently deploy mobile applications such as electronic health records, decision support, e-prescribing, e-research, and voice over wireless LANs
· Helps comply with healthcare security regulations
· Supports guest access without additional investment
· Provides the wireless foundation for mobile care applications and context-aware services

"Dieticians, nurses, and respiratory therapists, just to name a few, are using wireless tablet PCs to check orders, keep track of diets, and look back at test results. Every piece of information is where it needs to be, online, and the days of searching all over the place for a paper-based chart are over."
— Vance Green, Assistant Director of IT,
    Forrest General Hospital, Hattiesburg, Mississippi

Mobile Care: Facilitate Collaboration Among Mobile Caregivers

A lab test reveals that a patient has elevated potassium levels. The nurse uses a phone at the nursing station to call the attending physician, but needs to leave a voicemail message. When the physician returns the call, the nurse is in another patient's room. Later, someone remembers to give her the message.

Nurses are in short supply, and every minute they spend trying to reach other mobile employees subtracts from the time available for patient care. Today, nurses walk extra miles to the nursing station each week simply to make and receive calls from physicians and pharmacists and order dietary, transportation, and housekeeping services. Physicians sometimes need to make several phone calls to receive lab results.

Cisco Mobile Care helps facilitate collaboration among mobile caregivers, enabling them to reach each other no matter where they are, using Cisco Unified Wireless IP phones or new dual-mode (WiFi/cellular) phones. A physician who cannot speak with a patient, for example, can simply press a button on the dual-mode phone to redirect the request to another physician. If nobody answers, the hospital can handle it according to policy—perhaps by trying again or by alerting another nearby physician. Together with our partners, Cisco is enabling information access through wireless phones and other wireless devices for faster patient care from any location.

"Thanks to the enhanced communication between hospitals and pharmacies, medication errors have been reduced from 6 percent to none."
— Dr. Rafael Peñalver, General Secretary,
    Servicio de Salud de Castilla-La Mancha, Spain

Another Cisco Mobile Care application modernizes nurse call systems by making them more effective and less intrusive. Traditional nurse call systems rely on overhead pagers, creating a noisy, unpleasant environment and interrupting nurses without indicating what the patient needs. At Servicio de Salud de Castilla-La Mancha, Spain, nurses have traded in their text-based pagers for Cisco Unified Wireless IP Phones, which deliver text messages, voice calls, and even photos of the patient who needs assistance. Knowing what the patient needs ahead of time saves a trip to the patient's room to find out, and can improve response times in emergency situations. The nurse simply presses a button to acknowledge a message. If a message is not acknowledged, the system can be set up to escalate the request to someone else until it receives a response. Cisco Unified Wireless IP Phones keep a history of alerts to help the nurse remember pending requests, and system software keeps a record of interactions for the nursing manager.

In some hospitals, patients can press a button on the bedside Cisco Unified IP Phone to indicate the nature of their request—for example, water or pain medication.

Benefits of Cisco Mobile Care
· Facilitates collaboration among mobile staff
· Improves responsiveness and patient satisfaction
· Eliminates unproductive time spent searching for staff or attempting to reach them on multiple devices
· Frees up time to focus on patient care
· Simplifies communications by integrating voice, text messages, and images onto a single device
· Improves patient care by delivering communication to the point of care rather than to a central nursing or administrative location
· Helps avoid miscommunications and ambiguity

Cisco Context-Aware Healthcare: Quickly Find Equipment and People

A patient needs to be transported and no wheelchair is in sight— although the hospital routinely purchases many more wheelchairs than it needs to avoid shortages. In the next ward, a biomedical

engineer walks through the hallways looking for an infusion pump that is scheduled for maintenance. By some estimates, seven hours in an eight-hour repair job are spent simply locating the equipment and updating the inventory database.

Hospitals can quickly locate their mobile assets—from wheelchairs and gurneys to intravenous pumps and dialysis equipment—with Cisco Context-Aware Healthcare. Personnel can view a hospital floor plan on a computer screen to see the location of mobile equipment or personnel with attached WiFi tags, as well as all devices with built-in capabilities, such as laptops, tablet PCs, and Cisco Unified Wireless IP Phones. In addition to finding people and things more quickly, Context-Aware Healthcare eliminates noisy, repeated overhead pages requesting equipment creates a more pleasant healing environment.

At the Bronson Healthcare Group of Kalamazoo, Michigan, greeters and orderlies used to devote part of each day to looking for wheel-chairs, and twice a week emailed "wheelchair alerts" to all 4000 employees. Now any clinician who needs a wheelchair simply calls a greeter's station and asks for the nearest chair. A quick glance at the screen shows where the tagged wheelchairs are located. Patients wait no more than a few minutes for a wheelchair, and the hospital saves money by reducing staff time spent on searches.

When staff members are given WiFi tags, Context-Aware Healthcare can accelerate surgery starts and ensure proper staffing levels. If all members of a core team are required to meet in the operating room before a surgery, for example, a nurse or administrator can quickly consult a computer screen to confirm that all required parties are present. If any are missing, the nurse can quickly contact them on their Cisco Unified Wireless IP Phones or dual-mode phones, avoiding delays.

Hospitals can also use Cisco Context-Aware Healthcare to monitor temperature, pressure, or humidity sensors in individual rooms. Patient comfort and care improve, and the hospital can be sure that equipment or medication are stored in the appropriate environmental conditions to reduce equipment maintenance and minimize wasted supplies.

Why Cisco?

Cisco leads the industry in providing healthcare connectivity that facilitates collaboration among physicians, nurses, and ancillary staff. The company is helping to transform healthcare through:

· Innovation: Cisco has a 20-year proven track record of deploying innovative network solutions and best practices that enable physicians, hospitals, clinics, and other healthcare and life science organizations to be more effective. Cisco is also a founding member of the Wi-Fi alliance and is strongly involved in standard bodies to ensure that the latest innovations are available on the Cisco Unified Wireless Network.

· Participation: Cisco is involved with international healthcare initiatives focused on improving access to healthcare information

· Collaboration: Cisco is working with healthcare industry leaders—including application, system and service providers, device manufacturers, and medical technology vendors—to connect the entire healthcare environment to a common information and communications infrastructure.

Benefits of Cisco Context-Aware Healthcare

· Improves patient care and satisfaction by enabling faster location of medical equipment and better monitoring of environmental storage conditions
· Makes more efficient use of staff time by minimizing time spent searching for equipment
· Reduces capital equipment costs by eliminating the need to overpurchase hard-to-find equipment
· Accelerates surgery starts and helps ensure minimum attendance in the Emergency Room by confirming that required staff are present

"[Context-aware healthcare] saves staff time in finding medical equipment. Previously, there was a danger that precious minutes would be wasted looking for life-saving equipment. Now we know straight away whether the unit or device we need is available, and where to find it."
— Rafael Nuñez, Head of Communications, Servicio de Salud de Castilla-La Mancha, Spain

Find Out More

For information about Cisco Mobility Solutions for Healthcare, visit: www.cisco.com/go/healthcare and www.cisco.com/go/wireless

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