

## Healthcare Agency Upgrades Network to Share Patient Information

Department of Health and Medical Services of Dubai deploy Cisco Medical Grade Network.

EXECUTIVE SUMMARY
<ul style="list-style-type: none"> <li>• Department of Health and Medical Services</li> <li>• Health &amp; Medical Services</li> <li>• Dubai, United Arab Emirates</li> <li>• 10,000 employees</li> </ul>
<p><b>BUSINESS CHALLENGE</b></p> <ul style="list-style-type: none"> <li>• DOHMS needed speed and efficiency in exchanging information from the patient's bedside to labs and other relevant centers</li> <li>• It also needed to develop a convergence roadmap to support healthcare changing from institution-centric to a patient-centric model</li> </ul>
<p><b>SOLUTION</b></p> <ul style="list-style-type: none"> <li>• Cisco Aironet Access Points, with full security provided by the Cisco Healthcare Protect plan</li> <li>• Cisco Catalyst 3560 POE Switchers, CiscoWorks, Wireless LAN Solution Engine and Cisco Secure Access Control Servers</li> </ul>
<p><b>BUSINESS RESULTS</b></p> <ul style="list-style-type: none"> <li>• The hospital can now share information more efficiently, establish the highest possible levels of security, and reduce administrative maintenance</li> <li>• The Physician Order Entry (POE) system enabled physicians to have greater mobility in patient wards and, most importantly, instant access to patient information, lab results, and X-rays</li> </ul>

### Business Challenge

The Department of Health and Medical Services (DOHMS) is the main body responsible for controlling medical services in the emirate of Dubai, United Arab Emirates. It has gained a reputation as a leading provider of medical services at the regional level and has served as a model to other similar institutions across the Gulf. It runs several medical establishments in Dubai, including the Dubai Hospital, Rashid Hospital, Al Wasl Hospital, Blood Donation Center, Thalaseemia Center, Fertility Center, and Primary Health Care Center. The rapid developments taking place in Dubai over the past two decades and the resultant increase in population have put extra pressure on DOHMS, and delivering quality services to the large number of patients has become a challenge. Over the past few years, the focus has been on modernization of healthcare services using technology.

A key challenge before DOHMS was to introduce speed and efficiency in the procedure of exchanging information from the patient's bedside to labs and other relevant centers. In other words, DOHMS needed to deploy advanced IT systems that would make it easier to access and share data, even while the doctors are moving from patient to patient.

With the model of healthcare changing from institution-centric to patient-centric, DOHMS realized that it was essential to embrace networking technology to achieve this critical goal. DOHMS realized that Web-based technologies hold the key to delivering high-quality medical care.

## Network Solution

Sina Abdulaziz Khoory, IT director, DOHMS says: “The need of the hour was a network that could significantly reduce the time and manpower required to relay requests from the patient’s bedside to specialist units, such as X-ray, thereby facilitating faster and more accurate response, while streamlining processes.

DOHMS adopted an extremely rigorous process in selecting the solution. After carefully considering the merits of various solutions, DOHMS was convinced of the overall superiority of the Cisco® wireless patient care system.

**“Enabling wireless access to patient history records and online orders for lab tests form the core of our ambitious project in introducing full digitization of in-patient services in our hospitals. This is a historic step that will transform the entire system of delivering patient care through wireless technology that is compatible with all types of mobile devices. We are planning to extend the wireless patient care system to other areas of the hospital, such as outpatient wards, further consolidating our strategic partnership with Cisco Systems.”**

—Sina Abdulaziz Khoory, IT Director, DOHMS

“The solution that we had in mind had to have strong authentication and encryption capabilities, because DOHMS places major importance on the confidentiality of patients’ medical history data. At the same time, it had to be highly responsive and interactive. We concluded that Cisco Systems’ combination of hardware, software, and configuration expertise best suited our requirements,” Khoory adds.

The Cisco Medical Grade Network (MGN) portfolio of technologies was selected by DOHMS to transform patient care through wireless, Web-based technologies. MGN is a framework for hospitals and large clinics, based on converged IP network, which uses Cisco’s leading IP-based technologies. It offers hospitals a foundation on which to build networked applications such as telemedicine, e-radiology, and e-learning, while helping them to improve quality of care for patients and manage resources more effectively. The solution allows doctors to make maximum use of user-friendly wireless networking tools to enhance patient care at the bedside, eliminating associated voluminous paperwork and further speeding processes.

Samer Al Kharrat, managing director for Gulf and Pakistan at Cisco says: “Cisco Medical-Grade Network is a blueprint of the future networking requirements for healthcare organizations to deliver e-health services and high-quality medical care for the 21<sup>st</sup> century. Often, hospital networking requirements are not integral to the healthcare business requirements. The real challenge, therefore, is to integrate disparate islands of care, information, and knowledge and re-engineer the processes that form the patient’s journey.”

The Cisco MGN portfolio of technologies has been implemented by Cisco Systems, in association with a local partner, in all in-patient units at three main hospitals of DOHMS: Rashid Hospital, Dubai Hospital, and Al Wasl Hospital. Future phases will expand this solution to other emergency and out-patient units.

The implementation involved linking more than 120 laptops to the DOHMS network through a large number of Cisco Aironet® Access Points, with full security provided by the Cisco Healthcare Protect and Secure networking solution that controls authentication and accounts for all users accessing the network, to trigger an immediate response to any security threat.

Besides the Cisco Wireless Access Points, Cisco hardware and software used in the project included Cisco Catalyst® 3560 Physician Order Entry (POE) Switches, CiscoWorks Wireless LAN Solution Engine and Cisco Secure Access Control Servers. In the network core, DOHMS deployed Cisco Catalyst core switches, with a fibre cable backbone capable of Gigabit Ethernet bandwidth.

### **Business Results**

In the first phase, doctors at the three hospitals used the wireless networks to serve 14,500 in-patients at their bedside, using the POE system to electronically requisition various services, such as radiology and lab requests. By facilitating secure wireless networking, the system enabled the physicians to have greater mobility in patient wards and, most importantly, instant access to patient information, lab results, and X-rays by means of a laptop in a wheeled cart.

The hospitals can now share information more efficiently, establish the highest possible levels of security and reduce administrative and maintenance, troubleshooting, and training costs. More significantly, the solution incorporates robust products that protect the network against outages, service degradations, and security breaches.

“Medical Grade Network’s converged architecture decreases maintenance and network administration costs, increases staff productivity, and supports the seamless delivery of device and location-independent applications, services, and information to the people who need it, when they need it,” says Al Kharrat.

“Enabling wireless access to patient history records and online orders for lab tests form the core of our ambitious project in introducing full digitization of in-patient services in our hospitals. This is a historic step that will transform the entire system of delivering patient care through wireless technology that is compatible with all types of mobile devices. We are planning to extend the wireless patient care system to other areas of the hospital, such as outpatient wards, further consolidating our strategic partnership with Cisco Systems,” Khoory says.

Ahmad Dashti, Head of Operations Division, IT department, DOHMS, says: “Healthcare organizations need to rely on technologies more than ever to achieve their clinical and business objectives of improving patient care, maintaining costs, providing greater security and increasing access to data. The Cisco Connected Health vision is helping us reach a stage where everyone in the healthcare sector – from dentists and pharmacists to laboratories and hospitals – offer integrated services rather than fragmented ones.”

#### Product List:

- Core router 7200
- Core Switch 6500
- Cisco Wireless
- Cisco Pix firewall

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