SOLUTIONS
• MOBILITY
• SECURITY

WIRED FOR FIRST CLASS PATIENT CARE

Wireless 2.0: WiFi to the Max at the Point of Patient Care

One of the biggest challenges faced by medical staff is gaining fast and easy access to patient information. Forward-thinking hospitals are extending their use of wireless technology, giving staff the flexibility to view a wide range of hospital data at all times. This is helping improve patient care and meet performance targets set by the Government.

Liverpool Women's NHS
NHS Foundation Trust

CUSTOMER PROFILE

COMPANY: Liverpool Women's NHS Foundation Trust

INDUSTRY: Healthcare

COUNTRY: United Kingdom

FOUNDED: 1798

EMPLOYEES: 1,600

WEBSITE: www.lwh.org.uk

CHALLENGE

Hospital staff couldn't view critical medical data held on hospital information systems while treating patients at their bedsides. They lost valuable time walking to the nurses' station to access the information, delaying treatment and increasing potential risks from written errors. They needed a reliable mobile solution to drive efficiencies and improve patient care.

SOLUTION

The hospital implemented a wireless network, accessed using Dell desktops, notebooks and printers. The hospital opted for mission critical Dell ProSupport to underpin the solution, designed to minimise critical downtime.

BENEFITS

Get IT faster

- Solution deployed in five days thanks to Dell services
- Hospital saves £40,000 with Dell's strategic IT assessment

Run IT better

- Hospital meets Government target six months ahead of schedule with simplified IT administration
- Nurses cut 10 minutes per prescription with easy information access

Grow IT smarter

- Staff gain unprecedented mobile access to patient information

DELL

This is certainly a key focus at Liverpool Women's hospital, which is part of Liverpool Women's NHS Foundation Trust and England's largest specialist women's healthcare provider. Each year, the hospital delivers over 8,000 babies and cares for 1,000 pre-term infants in its neonatal unit. Staff had to deal with unnecessary complications when working at patients' bedsides without access to the hospital's information systems. The 'Meditech' system contains the medical history of patients and provides electronic processes for prescriptions, note-taking and ordering, while the 'Badger' system stores all neonatal baby information.

Doctors depend on these systems to make informed diagnoses quickly while nurses rely on them to prescribe medicine more accurately by having a comprehensive view of data, such as ultrasound scan results, patient allergies, and dosage recommendations. However, staff had to walk to the nurses' station to log on to the system, which wasted time and delayed treatment. It was further complicated because they often wrote down details on paper, increasing the possibility of manual handwriting errors which created potential risks to patients.

To simplify the process, the IT team introduced a wireless network on two wards to make information available for staff while moving around. However, the network was unreliable providing just 60 per cent availability. As staff couldn't rely on mobile access, they resorted to using the ward computer again.

Dr. Zafar Chaudry, director of information management and technology at Liverpool Women's NHS Foundation Trust, says: "We had to overcome inefficiencies – and potential risks – in our current working procedures. Despite previous problems, we believed that access to data at patients' bedsides is essential to supporting staff and helping them to deliver even better patient care, so we investigated alternative wireless technologies to find a solution for the entire hospital."

"DELL IS LIKE AN EXTENSION TO MY TEAM – A LONG TERM STRATEGIC ADVISOR, GIVING US ACCESS TO ITS EXPERTISE, TECHNOLOGY AND INDUSTRY RELATIONSHIPS"

Dr. Zafar Chaudry, director of information management and technology, Liverpool Women's NHS Foundation Trust

The IT team put together strict requirements for the new system, with reliable connectivity as a priority. It also had to be easy to deploy because it was essential that employees were not disrupted while delivering patient care. In addition, it needed to be simple to manage to ensure the administrative burden was minimised. Although an initial assessment showed that 100 access points would be necessary for constant availability, wireless provider Xirrus® proposed an innovative solution that could provide the necessary coverage and bandwidth with far fewer points. The team turned to Dell for advice.

Dr. Chaudry explains: "Dell is like an extension to my team – a long-term strategic advisor, giving us access to its expertise, technology and industry relationships. Dell Infrastructure Consulting Services provided an assessment and comparison of the Xirrus technology, thanks to its relationships with all the major wireless vendors. This showed that the Xirrus solution would work effectively with only 26 access points – saving us management time and money. Dell's qualified opinion gave us the industry insight and confidence to move ahead."

The final solution was based on Xirrus XS-3500 Wi-Fi Arrays accessed using the wireless enabled Dell™ Latitude™ D430 notebooks for ease of mobility and the highly reliable and stable Dell Optiplex™ 755 desktops. These would work on mobile trolleys, supplied by Dell, that are designed for electronic devices. Dell 3110cn and 3115cn colour laser printers were chosen for their wireless printing capabilities, combined with high quality colour output and low maintenance. They also had a 25 per cent lower cost than other equivalent printers available on the market. The hospital chose Dell Infrastructure Consulting Services to project manage and deploy the solution, underpinned by mission-critical business support using Dell ProSupport.

HOW IT WORKS

HARDWARE

- Dell™ Latitude™ D430 notebooks
- Dell Optiplex™ 755 desktops
- Dell 3110cn and 3115cn colour laser printers
- Xirrus® XS-3500 Wi-Fi Arrays

SERVICES

- Dell Infrastructure Consulting Services
  - Assessment, design and implementation
- ProSupport for IT

"THE PROJECT ASSESSMENT CARRIED OUT BY DELL INFRASTRUCTURE CONSULTING SERVICES ACCURATELY PREDICTED SAVINGS OF £40,000 WITH THE XIRRUS SOLUTION. WE ARE NOW PROUD TO BE SETTING A BENCHMARK TO SUCCESSFULLY USE WIRELESS TECHNOLOGY TO ENHANCE HEALTHCARE SERVICES"

Dr. Zafar Chaudry, director of information management and technology, Liverpool Women's NHS Foundation Trust

AWARD-WINNING SOLUTION SETS PRECEDENT FOR WIRELESS TECHNOLOGY IN HEALTHCARE

Liverpool Women's NHS Foundation Trust is the first of its type of 4th generation Wi-Fi system in healthcare, which sets a precedent for the best use of wireless technology in healthcare. This solution won the 2008 Computerworld (USA) Gold Medal Winner (Wireless) award and was recognised as a Laureate by the Computerworld Honours Programmes for its "Wireless 2.0: WiFi to the Max at the Point of Patient Care" project. This has consolidated the hospital's reputation for embracing technology and strengthens the relationship between the hospital and Dell.

Dr. Chaudry says: "Dell played a significant role in convincing the hospital board that an innovative wireless solution was the best route for the organisation. The project assessment carried out by Dell Infrastructure Consulting Services accurately predicted savings of £40,000 thanks to reduced network and data point installation. We are now proud to be setting a benchmark to successfully use mobile technology to enhance healthcare services."

DELL INFRASTRUCTURE CONSULTING SERVICES ENSURES SMOOTH IMPLEMENTATION

Staff work was uninterrupted by the implementation of the technology thanks to the skills of the Dell Infrastructure Consulting Services team, which included a project manager, multiple solutions architects, and dedicated wireless and device specialists. The Dell team was responsible for managing the project, ensuring the system was installed, configured, and working within five working days.

Dr. Chaudry says: "This was one of the most successful projects I've ever been involved in. Dell Infrastructure Consulting Services skills exceeded my expectations, installing all the technology in one week and within budget. Hospital staff had constant access to information systems during deployment, despite the scale and complexity of the project."

The flexible solution was designed by Dell to make it as easy as possible for staff to use the technology when looking after patients at any time. The Dell™ Latitude™ notebooks are embedded with Intel® Centrino® technology for the most reliable wireless connectivity, available from any location within the hospital. Staff can depend on this thanks to the extended battery life designed for mobile solutions. IT staff can easily deploy the Dell wireless printers quickly without the added costs of data points and delays caused by data point lead times.

NURSES SAVE 10 MINUTES PER PATIENT PRESCRIPTION

Staff can care for patients faster and more successfully with full access to electronic prescriptions and medical data. The system is in real-time now because people input details immediately. This means employees benefit from more accurate, up-to-date data and are able to access it more quickly. Nurses no longer have to walk to the nurses' station to check details such as allergies or drug dosages. Instead, everything is available at their patient's bedside, using the wireless network and a Dell Optiplex™ desktop or Latitude notebook on a mobile cart. They move easily between patients, simply taking the computer with them.

Dr. Chaudry says: "Nurses save an estimated 10 minutes on dispensing medication per patient using the wireless network with the Dell systems. We are truly mobilising staff to improve patient care, treating them quickly and accurately. Nurses enter their notes directly onto the system, rather than writing it up later. They spend less time on administration and the potential for error is reduced. Diagnoses are also better because doctors have the right information when treatment needs to be administered."

The next step is to introduce TV streaming across the wireless network, which will mean patients can view TV in dedicated waiting areas.

STAFF GAIN PEACE OF MIND WITH RELIABLE AND SECURE SYSTEMS

Nurses and doctors have confidence in their new mobile working procedures now they can rely on 99.9 per cent wireless network availability – almost 40 per cent higher than the previous solution. Integrated sensors in the Xirrus® wireless system automatically monitor rogue access points and other security threats to protect patient data. Each Dell Latitude notebook is compliant with the WiFi Protected Access (WPA2) encryption protocol for wireless computer networks, which guarantees enhanced security for the computers. Staff have gained peace of mind that in the event of a technology problem, the system will be up and running quickly with the expertise from Dell ProSupport resolving issues effectively. The hospital can depend on flexible support from Dell ProSupport with a range of services to respond specifically to their needs. For example, customers can choose two-hour, mission-critical onsite response service for front-line technology and four-hour response for servers with Dell ProSupport, designed to support the hospital's requirements for access to vital information.

Dr. Chaudry says: "We now benefit from constant operational continuity – up from 60 per cent from our previous wireless environment. We are becoming more efficient and ensuring high-quality patient care thanks to reliable and secure wireless access. We are even more confident now we can rely on Dell ProSupport mission critical services to keep downtime to a minimum."

Community staff out in the field are also benefiting from the highly secure and portable solution. The ultra light Dell™ Latitude™ D430 notebooks weigh only 1.3kg and come fully integrated with 3G for full online mobility, with smartcards and biometrics included to provide a secure way to access medical applications. If these weren't incorporated, it would be necessary to have bolt-on devices which would make the solution too cumbersome – considering midwives already have check-up equipment to carry such as baby weighing scales.

HOSPITAL MEETS GOVERNMENT TARGET THANKS TO CUT IN ADMINISTRATION TIME

The administrative burden for the IT team has been minimised by introducing an efficient system with only 26 wireless access points, based on automated processes. Each array is self-managing, self-configuring and self-healing. If one array fails, another will automatically cover the gap temporarily. The system is so simple that a new technician learned to operate it in just two days. He now spends less than one day a month centrally managing it from a single portal, which frees up most of his time to focus on strategic and proactive work rather than system maintenance.

Dr. Chaudry says: "The flexibility of the system has been instrumental in helping us achieve the Government target of seeing patients within an 18 week period, six months ahead of the deadline set. We couldn't have accomplished this without Dell. The technology is so simple to extend, we can provide online printers and computers in hours, making it easy to set up new clinics to accommodate patient needs and numbers. The system is also easy to use, which saves us time and minimises staff training. We have achieved savings of £40,000 over other wireless solutions that needed 75 per cent more access points and therefore more data points."

To find out more about Liverpool Women's NHS Foundation Trust mobility solution, please see additional case study at www.dell.co.uk/casestudies

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