

# Bedford NHS ushers in the hospital of the future with Xirrus Wireless



## Bedford Hospital NHS Trust

### Requirements

- Wireless coverage throughout its 400 bed acute district general hospital, enabling clinicians and staff to use their own devices from anywhere within the building without compromising IT security
- Specialised, flexible, high-capacity wireless to ensure coverage throughout the Victorian building, which has 'listed building' status
- Overcome potential Wi-Fi interference from older wirelessly-connected devices within the hospital, such as patient monitoring equipment, which is critical to patient care
- Maintain aesthetic integrity of the building by minimising the amount of cabling and wiring required throughout the hospital

Clinicians and hospital staff now able to use mobile devices from anywhere within the hospital, improving productivity and driving clinical excellence

Recognised as one of the country's top 40 hospitals for ten successive years, Bedford NHS has over 2,000 members of staff and provides a range of services to over 270,000 people living in north and mid Bedfordshire.

The hospital partnered with Xirrus to deploy its first wireless network to enable a Bring-Your-Own-Device strategy (BYOD) throughout its 400-bed acute district general hospital. The overarching aim is to improve patient care and drive clinical excellence, in addition to helping navigate more efficient use of hospital resources.

The wireless deployment enables clinicians and staff to use their own devices from anywhere within the hospital without compromising IT security, and delivers wireless access and a level of flexibility that opens up possibilities for improved patient care.

The success of the project is now pushing the roll-out to cover more corners of the hospital and with the latest Xirrus healthcare report showing that 20 per cent of NHS organisations see wireless as critical to enabling Jeremy Hunt's paperless initiative; this is a real step in the right direction for Bedford NHS.

Mark Austin, Assistant Director of Clinical Information and Business Intelligence, Bedford Hospital NHS Trust, who led the wireless implementation, explains: "The trend among many organisations to allow employees to bring their own laptop, smartphone or tablet device to use at work has begun to make its presence felt in the NHS. Doctors want to use their own iPads from anywhere within the hospital to make it easier for them to access data available to them via the internet.

"We realised that wireless would make it possible for clinicians and other administrative staff to have access to the clinical data they need to be able to work more effectively. For example, doctors can now access patient pathology test results, use electronic Prescribing and Medicines Management (ePMA), or look up x-rays, while doing ward rounds to reduce delays and deliver quicker, better patient outcomes. With many staff already owning the devices, costs saved here can be spent elsewhere."

Bedford Hospital decided to deploy a wireless network from Xirrus that enables both a private wireless network for use by employees or visiting public sector services, such as the Police or Blood and Transplant staff, and another virtual LAN (VLAN) providing a public facing SSID for patients and visitors.

"From a patient perspective, the devices used by consumers have driven people to understand how to use Wi-Fi at home and they expect it elsewhere," says Austin. "Without the restriction of

### Solution

- High capacity 4-radio XR-4420 Arrays with Application Control in high density areas
- Cost effective 2-radio XR-520 Access Points with Application Control in other areas
- Application-level visibility and control to ensure that critical medical applications, such as ePMA, are delivered reliably over the wireless network
- Ubiquitous wireless network able to support custom services, including wayfinding and dynamic content delivery

wires and distance there is so much that can be done. With our network provided by Xirrus, they can use the same front door as us to access their email and what they want to on their personal devices, but they are kept away from the NHS network and data."

## The Xirrus Advantage

The Bedford Hospital site itself dates back to the Victorian era and some of the wards have 'listed building' status, meaning there is little that can be done to the walls, floors or ceilings to accommodate significant IT infrastructure changes.

"The paradox of wireless is for each wireless access point, you need a wire," says Austin. "So each time you deploy a new one there is more disruption, more cabling, taking down ceiling tiles, cleaning up afterwards, and in these old Victorian buildings there is even the question of planning. The beauty of the Xirrus wireless platform is that fewer wireless points are needed, which in turn reduces the amount of cabling and wiring required throughout the hospital, helping to maintain aesthetic integrity.

"Another area where Xirrus stood out from the crowd was coping with potential interference from older wirelessly-connected devices within the hospital, such as patient monitoring equipment, which is critical to patient care. Because of this we needed to use the 5GHz frequency range, which is where the Xirrus kit was ideal as it optimises the Wi-Fi connections for those devices operating in both 2.4 GHz and 5GHz bandwidths."

## The hospital of the future, today

The clinical use of wireless is one of the most visible and obvious uses, but there are other key ways in which Bedford is using the technology to enhance working practices. Pharmacists are also able to use devices that are connected wirelessly to check stocks of particular drugs from wherever they happen to be. Managers and administrators can hold paperless meetings where they have access to patient records, hospital information, and all the usual data and files they would work with from their usual desk – helping them to make decisions and deliver action plans more efficiently.

The hospital also needed to allow third parties such as police officers and representatives of other health-related agencies access to the internet while at meetings in the hospital. From social workers to staff from the transplant authority, being able to get online while attending meetings or patient emergencies at Bedford Hospital can mean reduced administrative delays – information is available instantly. Follow-up actions can be logged, stored and circulated in real time, not after hours or even days have elapsed.

Shane Buckley, CEO of Xirrus, comments: "Bedford Hospital now enjoys wireless connectivity that enables and supports a truly progressive BYOD scheme. With Health Secretary Jeremy Hunt outlining plans for a paperless NHS by 2018, Bedford is a fantastic example of a progressive hospital ahead of the game, using wireless to improve productivity and flexibility in the workplace, while also enhancing the delivery of patient care."

## Bringing enhanced communication across the organisation

The entire wireless deployment took just two months and now nurses are able to move around with devices rather than be chained to PCs on ward stations, be more flexible and boost accuracy by putting notes into systems at a patient's bedside.

But Austin isn't stopping there and believes now the technology is in place there is even more opportunity for Bedford Hospital.

"Looking forward we are thinking more about communication," says Austin. "Trust laptops are set to work with our 3rd party software - Communicator. Some admin staff have already transferred their phones to Communicator, and so have I, so I run my phone calls over wireless, using Wi-Fi for voice. We have presence on this so people can see when other users are busy, and we also want to add location and roll it out further to more employees across the hospital."

The push to deliver healthcare services electronically is never going to be easy with such large NHS organisations. However, Bedford NHS is a shining example of where strides are being made within Trusts, ensuring that technology is helping improve the healthcare system for clinicians, staff and patients at a local level.

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## Benefits

- Delivers flawless wireless coverage to clinicians, staff and patients throughout the entire hospital building
- Doctors can access patient pathology test results, use electronic Prescribing and Medicines Management (ePMA), or look up x-rays, while doing ward rounds to reduce delays and deliver quicker, better patient outcomes
- Pharmacists are able to wirelessly check stocks of particular drugs from wherever they happen to be
- Managers and administrators can hold paperless meetings where they have access to patient records, hospital information, and all the usual data and files they would work with from their usual desk
- Reduced admin delays by allowing third parties, such as police officers, to access the internet while at the hospital
- Seamless scalability to enable expansion of the network to accommodate new buildings, applications, users and devices
- Staff now able to use the Wi-Fi for voice communications



"The beauty of the Xirrus wireless platform is that fewer wireless points are needed, which in turn reduces the amount of cabling and wiring required throughout the hospital, helping to maintain aesthetic integrity."



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