

Connectivity for Healthcare Environments

Uncovering the mobile experience
gaps in today's hospitals
and how to close them.



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The ongoing digital transformation of healthcare is driving greater efficiency, better patient experience and new opportunities.



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A time of transformation

The advent of remote consultations, digital health tools and virtual hospital services are revolutionising care delivery and patient interactions. Meanwhile, the building of new state-of-the-art digital hospitals that will benefit patients, visitors and staff is already underway.

Patients are embracing digital to access medical records and services online and via mobile apps, and self-monitoring their conditions with smart devices. When in hospital, they are using their phones to access email, social media and communications services to stay in touch with the outside world and keep family and friends updated on their health.

As we enter the era of the smart hospital, digitalisation is set to revolutionise how hospitals perform at a human, financial and operational level. Creating safer and more streamlined environments that improve patient wellbeing, efficiency and healthcare outcomes.



Connectivity is key

In the digital world, nothing happens without the right networks in place. Hospitals and larger health centres need fast and reliable connectivity. It's crucial for the digital applications and cloud services that sit at the heart of their transformation. In addition, the corporate and personal mobile devices used every day by staff, patients and visitors are also reliant on site-wide coverage.

The Better Connectivity for Health and Care (BC4HC) programme is among a range of new initiatives aimed at boosting broadband speeds in hospitals. However, a fixed line only approach is rarely enough as demands for speed, mobility and flexibility grow. A new generation of wireless connectivity options is therefore required.



Enhancing the experience with better connectivity

Mobile connectivity has become a utility, and there is an expectation that it will simply be there. Often in hospitals it isn't. Thick walls, steel structures and the use of metallised-glass in building design can have a major impact on mobile signals, reducing their strength or blocking them completely. It's a situation that's set to worsen as mobile operators transition their networks to 5G – as 5G signals are even more sensitive to disruption by physical infrastructure.

The issue of poor or non-existent public mobile coverage indoors has significant implications for user communities throughout the hospital.

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Patients need mobile coverage

In today's patient-centric service, experience is second only to health outcomes. For patients, the importance of being able to talk to family and friends, access social and entertainment services on their smart phones, and connect to the health apps and services they rely on cannot be underestimated. Yet poor mobile coverage frequently impacts all this, leading to frustration and feelings of isolation that can seriously undermine wellbeing.

Millions of people now use a wide range of health apps and services, whether on smart wearables or mobile devices. In-patients and out-patients will want to access these services, to view their medical records, check medicine names or doses when in consultation with clinicians, or simply input treatment data into their apps. They need a reliable connection to do it all.



Universal mobile connectivity is critical for enhancing everyday operations, resilience of key systems and improving the user experience.

Duty of care to staff

Hospitals have a clear duty of care to empower staff to do their work safely. In clinical settings, many healthcare professionals use their mobile devices: to engage with colleagues, use professional medical apps and more. The same is true for facilities managers, catering staff, maintenance teams and others, all of whom need to stay connected while moving around the campus.

In what can often be a stressful workplace, being able to connect with loved ones can help with managing work-life balance, and emotional support from friends and family can decrease feelings of burnout.



Efficient and resilient operations

Today's hospitals need modern data communications infrastructure that can support their smart ambitions. The need for greater efficiency and improved resilience is driving hospitals to adopting digital technologies that require robust, high-performance connectivity.



WiFi alone cannot meet the need for seamless voice and data connectivity that today's health professionals need when moving around the hospital. On-demand access to electronic patient record systems, paging, remote triage, and patient flow management all require connectivity which is both mobile and robust.

With technologies such as 5G slicing, dedicated capacity can be targeted at the most critical use cases. And hospitals can drive a host of automated monitoring services that will enable them to track assets, such as beds and medical equipment, more effectively and optimise the smooth running of hospital operations.

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Partnership connections

Reliable connectivity is also a must-have for suppliers and employees working in partnership organisations. On-site food, laundry, retail outlets, pharmaceutical deliveries and external IT support all need to be able to stay connected to stay efficient.

In the retail space, coverage is critical. Not only in ensuring smooth operations, but in driving footfall. Plus, with the shift towards cashless payments, often via mobile wallets, mobile connectivity becomes even more crucial.

By enhancing the mobile operator signal around the hospital, in-building connectivity eliminates not-spots and delivers consistent coverage throughout the hospital estate.

Understanding in-building connectivity

An in-building solution, such as a distributed antenna system (DAS), is one of the best ways to deliver public indoor mobile coverage throughout the hospital campus. Here, a network of small radio antennas is used to 'transmit' the signal from the UK's four mobile operators – filling mobile coverage gaps and delivering fast and reliable 4G and 5G connectivity to users.



Easy to scale, new antennas can be quickly and simply added to take coverage into new areas, enabling:

- **mobile users to make voice calls and get online**
- **secure access, sharing, and management of electronic patient records**
- **geo-tagging and tracking of assets and medical equipment**
- **remote triage and patient flow management**
- **patient access to entertainment and social media apps, helping to improve the overall patient experience**



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Why WiFi isn't always the right option

WiFi networks have often been deployed in hospitals. But they are not always the right option.



Many hospitals deploy WiFi solutions across their campus. These are typically used for business critical applications and for free 'guest' WiFi access. However, these networks are often overburdened. WiFi networks in hospitals have been known to fail with significant operational impact and systems being unavailable when needed. From a patient or visitor perspective, slow data speeds and the need to log-in create frustration. Many people are uncomfortable providing their personal details due to security concerns.

On a more general point, WiFi networks are prone to interference and contention problems that result in slow speeds and poor experiences. Also, with hospital staff and assets typically very mobile, remaining connected to the network while moving between WiFi 'cells' can be problematic.

WiFi definitely has its place in a healthcare environment, but the overall connectivity experience is optimised and far more resilient when there is also a solution providing dedicated mobile coverage and capacity.

Managing the future of smarter hospitals

Modern hospitals can operate effectively with a variety of connectivity networks. However, one size definitely does not fit all.

It is important, therefore, to work with a partner who is able to understand the specific needs of your hospital and map out the right connectivity solution. This may be a public or private network or a combination of both.

As a UK Critical National Infrastructure Provider and a neutral host – an independent provider delivering connectivity from all mobile operators – Cellnex will work with you to precisely tailor solutions to meet the specific needs of your environment.

We begin by understanding your needs, conduct detailed site surveys then deliver a blueprint tailored to your specific building requirements. Our engineering teams will then deploy and commission the solution.

On completion, your network will be fully managed and monitored 24x7x365 to ensure optimal performance.

With expertise in providing flexible commercial models for healthcare providers – some requiring no capital investment – we will create a package that is absolutely right for you and your users. And, as an end-to-end partner, we remove the complexities of dealing with multiple stakeholders by engaging with the mobile operators and third-party suppliers on your behalf.

End-to-end



Survey, design and engineering



Deployment and commissioning



Management of mobile operator connections



Operational monitoring and maintenance



Upgrades and extensions



Get in touch

With a proven track record supporting the NHS and private health providers, Cellnex UK will deliver the right solutions for you. We're here to help you close coverage gaps, deliver a seamless experience for patients, visitors and staff, and build a solid foundation for today's smart digital hospital apps and services.



Find out more and
book a meeting with our
connectivity experts at
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Cellnex plays a key role within the telecoms sector enabling connectivity throughout Europe. In the UK, as the country's leading independent telecoms site partner, Cellnex provides critical national infrastructure & services to telecoms operators, emergency services organisations and many other enterprises.

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