

Summary

N3 is working closely with the NHS to explore network-enabled ways to lower carbon emissions and transform its ways of working. With responsibility for providing leadership to help the health service combat climate change, the NHS Sustainable Development Unit is intimately involved in this process. Here we look

at three NHS innovations: the West London Cancer Network; the Cornwall & Isles of Scilly Community of Interest Network; and the Kent Cardiovascular Network. Each involves bold use of N3 IP technology to deliver measurable environmental gains as well as patient and staff benefits.

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Clinicians confront climate challenge

The NHS is the largest UK public sector climate change contributor, generating 18 million tonnes of CO₂ every year. About one fifth of that is transport related, because traditional clinical processes require patients and staff to meet each other.

Dr. David Pencheon, Director of the NHS Sustainable Development Unit, says: “One thing we can do, instead of moving all those people around, is to move information around. That’s where the huge importance of network technology – such as the N3 broadband network provided by BT – is so influential.”

The Sustainable Development Unit is tasked with providing leadership in the NHS to help the UK government meet its goal of an 80 per cent reduction in greenhouse gas emissions by 2050. Dr. Pencheon adds: “Towards that target we have set ourselves a milestone of a 10 per cent reduction in NHS carbon emissions by no later than 2015.”

N3 has been working closely with the NHS Sustainable Development Unit and NHS trusts to find ways to use broadband to lower their carbon emissions and transform their ways of working. This case study relates the experiences of three such forward-looking NHS bodies.



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The West London Cancer Network

The West London Cancer Network is a group of nine hospitals. Historically, the integration of information on local cancer care required, for example, couriers to transfer CD-ROMs containing patient data, or doctors carrying notes around in taxis. Now, using the N3 network, the West London Cancer Network videoconferencing solution enables simultaneous transmission of video images, voice, and data.

Simon Carter, Consultant Urologist at Imperial College Healthcare Trust, comments: “We are able to hold meetings every week. These are multidisciplinary affairs including doctors, nurses, and administrative staff. And we hold them in virtual space, joining all the hospitals in the network together.”

The videoconferencing solution enables the group to discuss individual patients by simultaneously reviewing, say, x-rays from one place and pathology from another. The patients gain from wider expertise and knowledge transfer between clinicians. The NHS benefits from greater operational efficiency and the environmental benefits of reduced travel and lower carbon emissions.



The West London Cancer Network has found that over 5,500 hours of consultant time and 10,000 or more hours of general NHS staff time each year are saved by using videoconferencing.

The Cornwall & Isles of Scilly Community of Interest Network

The county of Cornwall has some half-a-million citizens spread over 1,350 square miles. Treliske Hospital in Truro provides acute services to the entire population, as well as to the hundreds of thousands of tourists who flood in during summer.

Simon Goodwin, IT Director, Cornwall & Isles of Scilly Information & Technology Services, says: “The BT network platform allows us to deliver a wide range of services across the 160 sites that make up the Cornwall community.” In fact, the Trust has used N3 to create a community of interest network (COIN) to link distant sites to the A&E department at Treliske Hospital. Using video conferencing technology, this enables staff treating patients at remote clinics to gain access to expert diagnostic opinion from consultants at the heart of the county.

David Pencheon explains: “In sparsely populated areas, clinical staff make travel-related decisions daily – such as whether to treat people at a local facility or to send them to a distant specialised facility. The use of network technology means better-informed decisions can be made using remote expertise, for both the good of the patient and the elimination of unnecessary journeys.”

The Trust’s vision is to use the network to expand the boundaries of healthcare service delivery into patients’ homes. Simon Goodwin concludes: “It is a great example of 21st Century technology supporting 21st Century healthcare.”

The Kent Cardiovascular Network

The Kent Cardiovascular Network was set up to provide seamless and equal cardiac care for the 1.6 million people in the region. It uses the N3 broadband network to link local facilities with main centres of expertise in London.

Dr Jagdip Sidhu, Consultant Cardiologist, Darent Valley & St Thomas' Hospital, explains: "We use N3 broadband to send images instantly up to London. The most important of those are angiograms. Prior to using N3 we had to copy them onto CD-ROMs, which had to be posted or couriered. Now we can send the images in the blink of an eye, and we can view them in real time with our colleagues in London."

Invasive cardiac procedures can now be conducted locally with the knowledge that remote experts are on hand. In the last year alone nearly 400 angioplasty procedures were safely carried out in Kent. Prior to the existence of the Kent Cardiovascular Network, all patients had to travel to London for those procedures. This is saving a huge amount of patient inconvenience and travel. It is estimated that 30,000 miles of patient travel has been eliminated in the last year alone, making a huge reduction in the NHS carbon footprint in the county.

The N3 sustainability toolkit

"Those instances of how N3 technology is being used in London, Cornwall, and Kent are powerful enough," says Iain McConachie, N3 Sustainability Project Manager, "but you need to look at some of the other things in our toolkit to get the full sustainability picture." Iain cites the following examples.

- **Remote Access** – This proposition encourages home working. At present N3 supports over 17,000 virtual private network tokens in the NHS. Currently around 23 per cent of NHS staff with a token use remote access at least once a week, often from home. That saves around 150,000 days of commuting a year, and 1,250 tonnes of CO₂. Imagine if such facilities were extended to the 450,000 people employed by the NHS in non-

clinical roles, and each was encouraged to work just one day a week at home. The incremental savings would be nearly 3.8 million commuting days and over 27,000 tonnes of CO₂.

- **Electronic Transmission of Prescriptions** – The N3 broadband network enables over 2,700,000 prescription messages to be transmitted between connected GPs and pharmacists every week. If repeat prescriptions were to be made using the electronic nomination function, around 70 per cent of paper prescriptions could be removed from the system.
- **Choose and Book** – Connecting GPs and NHS Trusts together means N3 broadband is enabling patients to make their own appointments at their local GP practices or hospitals. Choose and Book is being used for around 50% of NHS referral activity from GP surgery to first outpatient appointment, providing greater convenience and saving additional travel time.
- **Picture Archiving and Communications Systems** – N3 broadband facilitates access to the one million images that are stored electronically every single day. This gives clinicians and specialists instant access to patient images, making savings on film, transport, and staff costs.

Over and above the purely clinical use of video conferencing such as in London, Cornwall, and Kent, Iain McConachie points to its actual and potential benefits in the day-to-day running of the NHS. "When fully embedded into the NHS, some 600 video conferencing end points will be in use for an average of four hours per day," he says. That equates to a saving of over 2.3 million in travel hours, over £160 million in travel costs (both staff time and fares), and nearly 9,000 tonnes of CO₂.



Conclusion

High quality healthcare is largely about getting the right treatment to the right person in the right place at the right time. As the examples above demonstrate, a network-based approach has significant influence on getting that right.

There are 33 other cancer networks in the UK, set to deliver similar benefits to the West London instance. The sixty-six COINs in existence in Britain are joining up clinical care in sparsely populated areas such as Cornwall, and bringing together specialisms as in

Kent. The N3 sustainability toolkit is having a growing effect in transforming the way that the NHS works. That activity – all energised by N3 broadband – will make a real contribution to the task of the NHS Sustainable Development Unit.

Dr. David Pencheon sums up: “The beauty of N3 is it allows us to move information and intelligence around the system, which is a critical part of high quality healthcare. That benefits the public, it benefits the patient, it benefits the professionals, and it benefits the planet.”

About N3

N3 is an enterprise-class wide area network that runs over a high-speed IP-based multi-protocol label switching (MPLS) backbone. Over 43,000 connections link 1.3 million NHS employees through 62 points of presence across England and Scotland.

The NHS N3 network is helping to reduce cost and carbon emissions. The potential is to lower NHS expenditure by over £115.2 million per annum. Aside from the figures quoted above, each year it could also save around 250,000 tonnes of CO₂, 100,000 trees, and 100 million litres of water

N3 is provided to NHS Connecting for Health by BT through N3 Service Provider (N3SP) – a company independent of BT that was set up to ensure value for money by using an array of suppliers to provide discrete segments of network services against strict specifications.

For more information please visit our website: www.n3.nhs.uk or call the N3SP Helpdesk 0800 085 0503 Option 3.

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