Hospital System Accelerates Stroke Diagnosis

Doncaster & Bassetlaw Hospitals improved clinician productivity with Cisco TelePresence, WebEx, and Unified Personal Communicator.

EXECUTIVE SUMMARY

DONCASTER & BASSETLAW HOSPITALS NHS FOUNDATION TRUST

- Healthcare
- South Yorkshire, United Kingdom
- 6,000 employees

CHALLENGE

- Accelerate stroke diagnosis to improve outcomes
- Increase productivity
- Simplify training

SOLUTION

- Implemented Cisco TelePresence in emergency room and stroke consultants' offices, for remote stroke diagnosis
- Worked with 2e2, a Cisco partner, to integrate Cisco TelePresence with Cisco Unified Personal Communicator so that stroke consultants could interact with patients from any hospital ward
- Conducted training using Cisco WebEx

RESULTS

- Saved valuable minutes in stroke diagnosis
- Increased training efficiency 100-fold
- Freed up 50 hours annually for each doctor

Challenge

Doncaster & Bassetlaw Hospitals is a National Health Service (NHS) Foundation Trust, with six hospitals in England. The United Kingdom's NHS is the world's largest publicly funded health service, and is founded on the principal that good healthcare should be available to everyone, regardless of ability to pay.

Doncaster & Bassetlaw continually looks for innovative ways to improve healthcare delivery without increasing costs. "Healthcare provider responsibilities are growing exponentially, but our resources are not," says Andrew Clarke, IT manager, Doncaster & Bassetlaw Hospitals. To bridge the gap, the IT department decided to investigate how network-based collaboration and business video could address three major challenges:

- **Faster stroke diagnosis, for better outcomes:** The trust has two senior stroke consultants to serve its own hospital as well as four other local trusts. When a suspected stroke patient arrives in the emergency room (ER), the consultant has to get there quickly, because for every minute a stroke goes untreated, 2 million of 3 billion total brain cells are lost.
- **Increased productivity for clinical staff:** Nearly 20 miles separate the two main sites. The Trust wanted to reduce the time that staff spent driving between sites, as well as the roundtrip mileage reimbursement that amounted to approximately £50,000 annually.
- **Simplified training:** The IT department needs to train 100 to 5000 hospital users whenever it introduces a new IT system. In-person training at different locations took weeks.

> "Healthcare expectations exceed capacity. Cisco collaboration solutions are helping to make our clinical support staff more efficient."
> **— Andrew Clarke, IT Manager, Doncaster & Bassetlaw Hospitals**

Solution

Doncaster & Bassetlaw Hospitals has increased the efficiency of healthcare delivery by using Cisco® collaboration solutions based on business video.

> "Our Cisco TelePresence solution enables us to react faster when patients have suffered a stroke. In medicine, saving time ultimately saves lives."
> **— Andrew Clarke, IT Manager, Doncaster & Bassetlaw Hospitals**

Stroke Diagnosis with Cisco TelePresence

After evaluating leading telepresence solutions, Doncaster & Bassetlaw chose Cisco TelePresence™, primarily because of its reliability and ease of use. "We have traditional videoconferencing systems that require frequent intervention from IT," says Clarke. "Cisco TelePresence is much easier to support, and we're confident it will be fully functional when we need it for stroke diagnosis at 3:00 a.m., when IT staff are not present."

Doncaster & Bassetlaw engaged 2e2, a Cisco Gold Certified Partner, for design and implementation. The partner implemented two Cisco TelePresence 500 systems, one in a cubicle in the ER and another in the stroke specialist's office. When a suspected stroke victim arrives in the ER, the nurse brings the patient to the cubicle, and simply touches a button on a Cisco Unified IP Phone to automatically establish a session with the stroke consultant. The patient and clinician can see each other as if they were face to face. The high-definition display easily reveals signs of stroke, such as a droopy eyelid, and the high-fidelity audio enables the physician to easily detect slurred speech, another stroke symptom.

Physicians who are not near a Cisco TelePresence system can see patients in the ER Cisco TelePresence room using Cisco Unified Personal Communicator software on their laptops, from any location in the hospital with a wireless network connection. Partner 2e2 performed the required integration.

Business Collaboration with Cisco Unified Personal Communicator

The Trust's directors and IT staff also use Cisco Unified Personal Communicator software on their laptops for video-based collaboration, saving the time to drive between sites to meet in person. "Business video enables more accurate communications than voice-only calls, because you can see the other person's facial expressions to gauge emotion," says Clarke.

Cisco WebEx for Training

Hospital trainers now use Cisco WebEx™ to train employees on new hospital systems, using voice, web sharing, and interactive features. The trainer records the session, and people who cannot attend in person can simply open a link to see and hear everything that occurred during the live training, including participant questions.

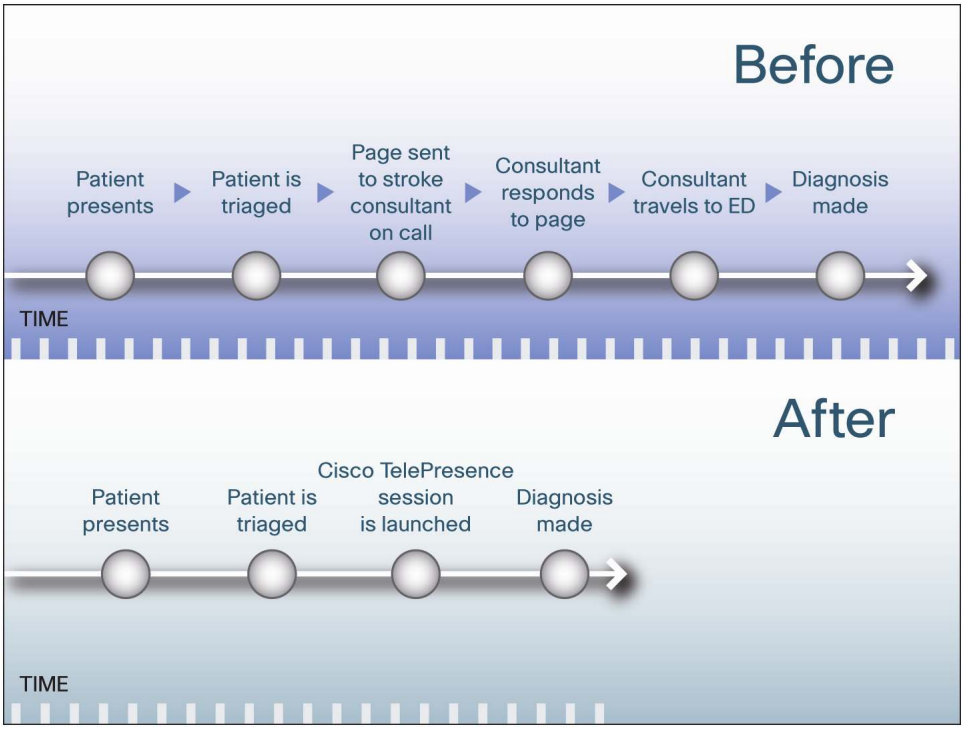
The hospital is also using Cisco WebEx to offer master classes for clinicians. For example, one of the hospital's ear, nose, and throat (ENT) specialists taught a master class for participants around the world. "In the past, we would have had to limit the class to 30 to 40 people," says Clarke. "Using Cisco WebEx, we will be training 1000 people over three days. Expanding our reach helps to strengthen Doncaster Hospital's global reputation." Similarly, when more people signed up for the national conference on digital imaging than the venue could accommodate, the Trust invited people to participate with Cisco WebEx. The Trust received very positive feedback, with 100 people attending remotely.

Results

Faster Diagnosis Through Telemedicine

The main benefit from introducing Cisco TelePresence for stroke diagnosis is reducing the time before stroke patients are seen, helping to improve outcomes. Stroke patients no longer have to wait until the consultant responds to the page and can get to the ER, often saving 15 to 60 valuable minutes. “Our Cisco TelePresence solution enables us to react faster when patients have suffered a stroke,” says Clarke. “In medicine, saving time ultimately saves lives.”

The stroke specialists have enthusiastically embraced the Cisco TelePresence system, because it increases their productivity and eliminates the stress of sprinting across the hospital to the ER. The ease of use contributed to user acceptance. “A telemedicine solution that required a college degree in computer science wouldn’t work in our environment,” says Clarke. “Cisco TelePresence provides a one-touch solution.”



Increased Productivity

Using Cisco Unified Personal Communicator and Cisco WebEx to collaborate with voice, video, and data saves physicians from having to drive to other hospital sites for administrative and clinical meetings. Each doctor who avoids one in-person meeting a week might save 1 hour of driving time, freeing up 50 hours annually for patient care. “Healthcare expectations exceed capacity,” Clarke says. “Cisco collaboration solutions are helping to make our clinical support staff more efficient.”

Travel avoidance not only increases productivity, it will help Doncaster Hospital reduce the carbon allowances that it has to purchase as part of the Carbon Reduction Commitment, the United Kingdom’s mandatory climate change and energy-saving scheme.

Low Support Requirements

“We chose Cisco TelePresence, because it is the easiest telepresence solution to support,” says Clarke. “Staff would only adopt a solution that was extremely reliable. We have yet to receive a single support call.”

Next Steps

The Trust has obtained the funding to implement Cisco TelePresence systems in two additional remote sites, and plans to begin using them for other specialties as well as stroke. Discussions about implementing Cisco TelePresence 500 Systems in clinicians' homes are under way. "Currently, doctors are paid to sleep on site when they are on call," Clarke says. "Allowing doctors to sleep at home will improve work-life balance while reducing costs. We expect to pay back the investment in less than 12 months."

Other plans include:

- **Remote imaging:** Doncaster has successfully tested viewing X-rays with Cisco WebEx. A technician retrieved an X-ray image from the Trust's Picture and Archiving Communications System (PACS) and then shared his desktop with a physician in another location.
- **Telemedicine communities:** Doncaster & Bassetlaw plans to take advantage of the Cisco Borderless Network Architecture to develop telemedicine communities throughout England, enabling different hospitals to share specialists.
- **More efficient collaboration within multidisciplinary teams:** Every four weeks, a multidisciplinary team of physicians spends a full day reviewing cases of patients with cancer and heart disease. Cisco TelePresence will facilitate collaboration while saving travel time.
- **Prison care:** Prisoners who need medical care not available within the prison facility are currently transported to the hospital with a driver and two guards. Deploying a Cisco TelePresence system in the prison would enable physicians to remotely determine whether prisoners with non-life-threatening injuries can be treated by the prison doctor or should be brought to the hospital.
- **Wireless voice over IP:** Most wards already have Cisco Unified Wireless Networks used for laptop access, and the IT department now plans to add voice over wireless. Doctors and nurses will carry Cisco Unified Wireless IP phones, so that they can reach each other wherever they are instead of walking to a central phone and leaving messages. The same underlying Cisco Unified Wireless Network used for voice and data can be used to find moveable assets that have been affixed with an RFID tag, such as intravenous (IV) pumps and pediatric beds.

PRODUCT LIST

Network Systems

- Cisco Catalyst® 6500, 3750, 3560, and 2960 Series Switches

Collaboration Solutions

Telepresence

- Cisco TelePresence 500 System

IP Communications

- IP Telephony
  - Cisco Unified Communications Manager
- Communication Endpoints and Applications
  - Cisco Unified IP Phones
  - Cisco Unified Presence

Mobile Applications

- Cisco Desktop Clients
  - Cisco Unified Personal Communicator

Conferencing

- Cisco WebEx Meeting Center

Wireless

- Cisco Aironet® 1130 Wireless Access Points
- Cisco Catalyst 6500 Series Wireless Services Module (WiSM)
- Cisco Wireless Control System

"Healthcare providers face increasing pressure to do more with less, which requires innovative approaches," says Clarke. "With Cisco TelePresence, Cisco has laid the groundwork for telemedicine. We have confidence that Cisco will be able to support us for years to come because of its heavy investment in research and development and strong market position."

For More Information

To find out more about Cisco Unified Communications, visit: http://www.cisco.com/go/unifiedcommunications

To find out more about Cisco TelePresence, visit: http://www.cisco.com/go/telepresence

To join conversations and share best practices about collaboration, visit: http://www.cisco.com/go/joinconversation

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