

Telemedicine Pilot Promises Step Change in Healthcare Delivery to Rural and Urban Areas

Executive Summary

CUSTOMER NAME

Scottish Centre for Telehealth (SCT), NHS Scotland (National Health Service for Scotland)

INDUSTRY

Healthcare

CHALLENGES

- Improve access to healthcare services in rural and urban areas
- Scale healthcare services to meet increasing patient demand
- Optimise the use of scarce medical expertise

SOLUTIONS

Cisco HealthPresence system for remote consultations

- Combines state-of-the-art video, audio, and medical information to create a virtual “in-person” doctor visit
- Integrates with call-centre technology, offering increased scalability and optimisation of scarce clinical resources
- Uses the network as a platform to provide the foundation for more efficient collaboration

RESULTS

- Provided diagnoses consistent with face-to-face consultations
- Received excellent feedback from both patients and clinicians
- Received an agreement to extend the NHS Scotland/SCT pilot

Business Challenges

Clinical resources are scarce in many countries around the world. Scotland is no exception. Optimising these resources is the biggest issue facing the Scottish healthcare system.

Access to healthcare services is another problem—particularly for the 500,000 people living in the Grampian region in northeast Scotland. Grampian is home to one of 14 regional health organisations in Scotland. Each has its own resources and out-of-hours facilities; this “siloe” approach means that doctors often are on-call, covering only three or four cases a night.

These problems are exacerbated by new contracts stipulating fewer hours for general practitioners, creating a greater shortage of experienced healthcare providers and services. Doctors from Poland, Germany, and other countries are being flown in to provide unscheduled-hours care to the region, but this effort is a costly, short-term solution.

This fragmented approach to healthcare delivery affects healthcare institutions. The Accident and Emergency Department at the Aberdeen Royal Infirmary, a leading teaching hospital in Scotland, suffers significantly. Thirty-nine percent of the population of Grampian lives in rural areas, and many patients are referred to Aberdeen for treatment. For some, this is an 80-mile-plus round-trip. In addition, some patients do not consult their local doctor, going to Aberdeen’s emergency department instead, assuming that they will receive quicker treatment.

“At the moment we are in a downward spiral with large numbers of people needlessly coming to the hospital for assessment, investigation, diagnosis, and treatment that could be managed remotely in their local community,” explains Dr James Ferguson, consultant in emergency medicine and clinical lead, Scottish Centre for Telehealth.



Solutions

The Scottish Centre for Telehealth (SCT) was created by the Scottish Government as a centre of expertise to help develop and support best practices in telehealth. It is a key part of the government's plan to develop a common information and communications strategy that underpins an integrated care service.

For some years, desktop videoconferencing has been used to enable Aberdeen Royal Infirmary to provide support to 15 community hospitals in the region that have medical units for minor injuries. For example, using the videoconferencing system, nurses can call Aberdeen to get an opinion about a specific case from an experienced doctor in the emergency department.

In 2005, SCT demonstrated its concept for a video-based telemedicine system that could be used in the community. While feedback was positive, it was not until 2007, when SCT discovered that the Cisco Internet Business Solutions Group (IBSG) was working on a similar solution, that the concept became reality.

The Cisco® HealthPresence Pod is based on the company's TelePresence system—an ultra-high-definition, virtual meeting-place solution that re-creates the experience of being in-person, regardless of geographic location.

The solution uses the network as a platform to combine video, audio, and data with a secure networking infrastructure powered by IP-based videoconferencing and Cisco IP Contact Center technologies.

In addition to audio and video, the network carries data from various IP-based medical devices that are integrated into the Pod, including thermometers; scales; blood pressure equipment; stethoscopes; ear, nose, and throat devices; and examination cameras.

HealthPresence offers medical facilities a scalable, comprehensive, and secure foundation on which to provide patients convenient, efficient, and effective care.

In January 2008, SCT and IBSG collaborated on the first HealthPresence pilot based at Aberdeen Royal Infirmary's Accident and Emergency Department. A number of patients who attended Aberdeen with non-life-threatening issues were asked to participate in the first phase of the pilot. Patients agreed first to an examination by a doctor via a Cisco HealthPresence Pod (with the doctor roughly 30 metres away), and second to another examination in-person by the same doctor.

Professor Gordon Peterkin, director of SCT, explains: "It was very important that we first evaluated the Pod in a safe environment, where we could validate the diagnosis and treatment indicated by a consultation via the Pod against normal practice."

Each patient completed a questionnaire, providing feedback on his or her experience. An independent evaluation report will be available in 2008.

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Phase 1 of the pilot ran for several months. During that time, more than 100 patients with non-life-threatening issues were seen in the Pod. Not only were examinations evaluated, but so were patient safety and clinician/patient experiences.

Results

Patients have reacted favorably to the Cisco HealthPresence Pods. “They say it’s almost like walking into a room and seeing the doctor there,” says Christine McClusky, service development manager, SCT. “The high-definition screen is really clear; being life-size makes it feel like you’re talking to a person only feet away from you.”

McClusky’s view is echoed by other doctors at Aberdeen. “I feel very comfortable diagnosing the patient using Cisco HealthPresence,” says Dr Karyn Webster, clinical fellow, Aberdeen Royal Infirmary. “I am able to see and speak to the patient and review their vital signs using the medical instruments that are integrated into the Pod. Being able to clearly see the patient as if they were sitting close to me helps me pick up subtle signs about their condition.”

The time it takes to complete an examination is another topic of great interest to the medical community. While the time required to make an accurate diagnosis via HealthPresence has not changed, the fact that an accurate diagnosis is possible within the same amount of time is seen by physicians as both credible and a bonus. In addition, the advantages delivered by streamlining access to clinical expertise via the Pod are not eroded.

The success of the pilot also highlights the potential of the solution in helping organizations transform the delivery of certain medical services. For example, doctors providing out-of-hours services could cover a wider geographic area, thereby increasing the number of cases they see. In this way, institutions in Grampian could further optimise scarce medical resources.

NHS24, the telephone and online medical advice service for NHS Scotland, is another example of where the Pod can be applied. NHS24 enables citizens to acquire trusted information about medical conditions or speak directly to a nurse adviser. HealthPresence could potentially be integrated into the National Health Service’s nurse-based contact centres to improve the delivery of care.

“We know we can reduce needless visits of patients to hospitals by redesigning the system so that people at the front of the care chain have the support of experienced people—the doctors and specialists—who are currently toward the end of that chain,” explains Dr Ferguson. He believes that up to 90 percent of patients who are admitted to hospital emergency departments could be diagnosed reliably and safely using the Pod. Any cases that cannot be diagnosed through telemedicine would be referred to the closest hospital or general practitioner.

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“The ability to set up any Pod to any doctor or nurse session will enable us to dramatically increase our outreach, effectiveness, and efficiency,” says Professor Peterkin. “It is part of a revolution in healthcare; part of the move to adopt technology that will fundamentally change for the better the way in which we care for people.”

Next Steps

During Phase 2 of the pilot, a Cisco HealthPresence Pod will be installed at a second location where operating models for many Pods-to-clinical stations can be explored. This will help SCT integrate Pods-to-clinical staffing and operating models for the Pods into existing workflows.

IBSG is also collaborating with other healthcare organisations around the world to explore how Cisco HealthPresence Pods could help alleviate shortages in clinical expertise and wellness services.

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More Information

The Cisco Internet Business Solutions Group (IBSG), the global strategic consulting arm of Cisco, helps CXOs and public sector leaders transform their organizations—first by designing innovative business processes, and then by integrating advanced technologies into visionary roadmaps that address key CXO concerns.

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