

Arras Hospital Paves the Way for Connected Health Across Europe

Executive Summary

CUSTOMER NAME

Arras Hospital, northern France

INDUSTRY

Healthcare/Public Sector

BUSINESS CHALLENGES

- Improve quality of patient experience with better care and shorter admissions
- Raise productivity/performance via collaboration and work-process changes
- Build foundation for a Connected Hospital as part of the wider connected healthcare system

SOLUTIONS

- Evolving template for transformation based on public- and private-sector models
- Consolidating input from key health innovators via Connected Health Think Tank
- Use of collaboration tools with better access to information for staff

BUSINESS RESULTS

- Performance, efficiency, and quality of care supported by key innovations
- Integrated approach to patient's journey through a health system that extends to general practitioners
- Bedside console for entertainment, clinical information, health education videos, and video links to schools

Four years ago, Arras Hospital, in northern France, was unpopular with patients and facing major financial challenges. Through a sustained commitment to innovate and a willingness to embrace new, collaborative ways of working, it has become a European leader in Connected Health. Arras is achieving major efficiencies while improving quality of patient care—and paving the way to a set of connected, patient-centered practices that will extend, ultimately, to the entire healthcare community.

BUSINESS CHALLENGES

When the new leadership team arrived at [Arras Hospital](#) in 2001, fresh from a successful transformation of a smaller facility at Montreuil-sur-Mer in the Pas de Calais, they faced a formidable challenge: The new CEO and CIO found that Arras—a regional French general hospital, with 1,200 beds and 2,000 staff, run on highly traditional lines—was facing serious problems in the provision of healthcare services to patients. In a competitive climate, this also weakened its claim to scarce financial resources.

Patients went elsewhere if they could. To make matters worse, communication within Arras was poor due to the staff's resistance to sharing information with one another, such as how many beds were available. Part of the problem was that each ward was working in its own part of the hospital and didn't speak to other staff members, explains Dr. Arnaud Hansske, CIO and head of medical information. "There were lots of little kingdoms and it was very difficult to run," adds Hansske.



Prepared by Cisco Systems, Inc.
Internet Business Solutions Group

Yet Dr. Hansske and Alain Lecherf, who was CEO of the hospital at that time, were convinced they could apply the lessons of transformation learned at Montreuil by replicating them on a larger scale. They wanted to create a truly patient-centered system, fully connected to the region's wider healthcare community. And they did not just want a quick fix: their plan was to build for the long term, creating an evolving model that could stand for the next 10 to 15 years.

It was also clear that to achieve its full potential, the plan would involve building first a new clinic for psychiatric patients, and then a new general hospital. Dr. Hansske and his team—supported by its locally-based partner Networks and Communications Systems (NCS)—found that the building architects and engineers were reluctant to rethink time-tested construction principles in accordance with new technology and working methods. Meanwhile, the Arras doctors—as in all French hospitals—report to the [Ministry of Health](#) instead of the hospital management and so did not have to cooperate with any projected new initiatives.

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**Dr. Arnaud Hansske, CIO and head of medical information
Arras Hospital**

SOLUTIONS

At an early stage, Dr. Hansske began meeting with the [Cisco Systems® Internet Business Solutions Group \(IBSG\)](#) to develop ideas and best practices in Connected Health. Dr. Hansske's participation in the Connected Health Think Tank—a high-level forum that meets twice yearly and is facilitated by IBSG—was the crucible for the cross-fertilization of ideas with other senior professionals from many countries who are on similar journeys of transformation.

Regular attendance allowed Dr. Hansske to deepen and extend the ideas he had pioneered at Montreuil and hear of the latest developments. With such input and ongoing support, the hospital's leading executives developed their vision of a Connected Hospital in northern France, linked internally across departments and functions and externally to the wider healthcare community. The Arras organization also completed an independent process of defining infrastructure requirements, choosing a Medical-Grade Network from Cisco® with integrated Wi-Fi and mobile capabilities to support their Connected Hospital.

Impeccable security was vital to instill trust in the shared infrastructure among the physicians, many of whom declined to share professional secrets online and were under no legal obligation to do so until 2002. High-level security was no less vital to Dr. Hansske's plan to establish a complete online medical information system for the hospital, which would provide access to research, treatment information, and—above all—allow for the creation and secure storage of electronic patient records that could also be read by family physicians connecting to a secure network from outside.

From the discussions between Dr. Hansske, his team, and Cisco IBSG emerged an interlocking set of advanced healthcare practices. These include collaborative working tools, including mobile devices such as tablet PCs for doctors to record notes and patient information while on the move. These devices can be linked instantaneously to the patient's electronic record by a wireless connection to make sure that everyone concerned with the treatment of that patient is fully informed and up to date on the patient's care.

Regular video conferencing with nearby [Lille University Hospital](#) is another important collaborative technique used at Arras to obtain second opinions, thus drawing on a wider base of medical knowledge than its staff alone can provide. The ability of other physicians from outside the hospital to access hospital information is a major shift from the traditional view of a hospital as “closed off” or “unreachable,” and has been welcomed by physicians and in-patients alike.

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**Dr. Arnaud Hansske, CIO and head of medical information
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To accelerate staff adoption of new ways of working, Arras invested time and money in educating its employees. In addition to regular workshops with different staff groups (and an internal newspaper), the hospital set up a classroom with eight PCs to help all staff members master new skills. However, the hospital doctors were the hardest to convince of this new approach; but by introducing new ways of working around them, such as new communications tools and digital speech recording devices for medical secretaries, Dr. Hansske is gradually drawing them in.

“It’s a bit like the Asian game of ‘Go,’ where you encircle another player’s territory within a larger space on the board,” observes Dr. Hansske. “In the same way, by placing new, digitally-enabled, collaborative working methods around the perimeters of medical practice, we are transforming the nature of the practice itself.”

Just as the use of shared knowledge clearly benefits patient safety, much the same applies to Arras’ approach to facilitating the safety of its staff. Accordingly, in its new psychiatric clinic, the hospital uses an innovative system of geolocalization—a process used to locate the position of an object or the person carrying it via radio emissions—combined with an “alert” button in case of emergency. This move was an explicit response to staff concerns about violent attacks against them, including murder.

A realistic roadmap for the phased evolution of a Connected Hospital at Arras has been an indispensable aid to its progress. Innovations range from the nurse call integration over the IP telephony network, to the automated delivery of drugs by wireless-controlled trolleys traveling unmanned via the hospital elevators, and to planned patient terminals, which will come online when the new general hospital opens. In addition to providing bedside medical information to staff, these terminals, or consoles, will give patients the use of an IP phone together with free Internet access and entertainment, home and school video conferencing links, and self-help education videos.

“These innovative implementations owe much to the intelligent synergy between Cisco and its partner NCS,” adds Dr. Hansske.

BUSINESS RESULTS

Despite big differences between the two projects at Montreuil-sur-Mer and Arras—Montreuil involved merging three units into one and is only about half the size of Arras—results at Arras are forecast to match or even exceed the benefits achieved from the earlier program. At Montreuil, there was a 40-percent improvement in productivity and a 12-percent rise in patient throughput, coupled with a 20-percent reduction in the number of beds and a 10-percent reduction in staffing.

In the meantime, Arras has found that 40 percent of its clinicians' time was being wasted on coordinating tasks—a ratio that the new collaboration tools are now helping to reduce. For patients, the average length of stay has come down by 10 to 15 percent, and is expected to fall further after the new 565-bed general hospital opens in January 2007. Dr. Hansske notes that the benefits at Arras will become fully evident only after that date.

“IF YOU ARE A PATIENT, YOUR GP CAN NOW REACH THE HOSPITAL MEDICAL INFORMATION SYSTEM THROUGH THE NETACCESS SERVICE. WE HAVE PROFESSIONAL SMARTCARDS THAT AUTHENTICATE USERS ONTO THE NETWORK, AND WITH THOSE CARDS WE CAN ALSO REACH ALL THE INFORMATION ABOUT A PATIENT COMING IN TO THE HOSPITAL.”

**Dr. Arnaud Hansske, CIO and head of medical information
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However, other projects have already realized their benefits. The new 100-bed psychiatric unit, which broke ground in November 2003, was completed in just 18 months, replacing its rundown predecessor with a state-of-the-art facility that employs video surveillance over IP to guarantee safety for staff and patients. It has also provided a useful opportunity to pilot some of the ideas to be implemented in the new general hospital.

By mid-2006, Arras had reached the halfway point in its eight-year transformation cycle. Benefits recorded to date include the impact of the use of digital speech recording by medical secretaries. Patient discharge letters detailing treatment, prognosis, and professional recommendations for ongoing care are now dispatched in under a week—an eightfold improvement with evident benefits to continuity of care. The technology has yielded a 25-percent efficiency gain, achieving ROI in one year, and is also expected to help hospital management establish a secretarial pool system.

Today, about half the hospital doctors have adopted the new technologies, and their numbers are rising, bringing improvements to productivity and quality of patient care. That trend will gather momentum on deployment of 450 multimedia terminals in the new general hospital by January 2007, allowing staff to respond quicker to patient calls and access bedside information rapidly.

Productivity outside the hospital is improving as well: up to 150 external doctors have access to hospital patient information through a secure Netaccess service; their numbers are constrained mainly by the fact that some do not yet have broadband access. “If you are a patient, your GP can now reach the hospital information system through Netaccess,” says Dr. Hansske. “We have professional smartcards that authenticate users onto the network, and with those cards, we can also reach all the information about a patient coming into the hospital.”

As yet, there has been no formal survey of patient satisfaction conducted by the hospital. But Arras has, unusually, been nominated for two endorsements for its constructive approach and use of technology from the Haute Autorité de Santé—the French national health authority, whose mission is to provide independent advice and guidance on public-health matters and to bring together all relevant expertise (apart from safety issues) on patient-centered, continuous quality improvement in clinical practice.

A detailed analysis of what has been achieved there is under consideration by the European Commission for presentation to the European Parliament. The study is expected to focus on the benefits, the speed at which changes have been implemented, and the impact on ROI. The continuing success of the Arras hospital transformation received further strong endorsement with the news in mid-June 2006 that it had obtained a loan worth €15 million from the European Investment Bank, under the bank's Innovation 2010 initiative.

NEXT STEPS

Arras is fast becoming a role model for the Connected Hospital, playing its part in delivering the Connected Health vision to patients and clinicians. Medical authorities in Europe await the opening of its new general hospital with interest. They expect to see further proof of the benefits to quality of patient care, wider access, and—in an era of inexorably mounting pressure on public-health budgets—cost optimization.

Arras is also set to unleash another wave of innovation: it will, for instance, launch a pilot program to carry out medical examinations on inmates of a nearby high-security jail without their having to leave prison. The project is the fruit of two years of planning, and is intended both to mitigate the risks inherent in physical transfers and to save on costs.

The hospital will also be getting involved in a regional home telemonitoring project, thus extending the boundaries of the Connected Hospital, in much the same way as today's "edgeless enterprise" extends the boundaries of the private sector. This project would allow patients to engage in rehabilitation programs or receive ongoing care for chronic conditions at home.

MORE INFORMATION

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Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

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