



## EXECUTIVE SUMMARY

**Customer Name**  
Hospital Israelita Albert Einstein

**Industry**  
Healthcare

**Location**  
São Paulo, Brazil

**Number of Employees**  
6700

**Business Challenge**

- Support business growth
- Improve productivity of clinical staff
- Upgrade existing IT and telephony networks

**Network Solution**  
Cisco Medical-Grade Network that integrates voice, data, and wireless services

**Business Results**

- New network supports hospital's business objectives
- Clinical staff able to spend more time with patients
- Operational costs lower on integrated infrastructure

## Brazilian Hospital Deploys Innovative Services

Integrated Cisco Medical-Grade Network helps improve care and reduce costs at Hospital Israelita Albert Einstein.

### Business Challenge

The Hospital Israelita Albert Einstein (HIAE) in São Paulo, Brazil, is one of the most highly respected healthcare institutions in Latin America. In addition to general medicine, it also provides specialized services in complex fields such as oncology, neurology, cardiology, transplants, and diagnostics. The hospital has a reputation for pioneering the use of innovative technologies as it aims to achieve continuous improvement in its processes and service delivery. HIAE is committed to offering excellent care and a positive experience to its patients, who number about 150,000 per year.

Like other private healthcare providers, HIAE is constantly striving for sustainable growth in a fast-changing and competitive market. The hospital has developed a master plan to significantly increase its capacity by building new facilities and adding new outpatient and day clinic services. By 2011, HIAE expects to grow its beds by 40 percent.

Expansion on such a large scale requires a powerful and resilient IT infrastructure. Because the hospital's communications networks were due for an upgrade, HIAE decided to invest in new technologies that would support its ambitious plans for future growth.

"We were using four different networks for voice, data, vital signs monitors, and the Picture Archiving and Communications System (PACS)," says Sergio Arai, the hospital's Chief Information Officer (CIO). "All the networks were due for renewal, and we decided the time was right to completely replace them with one integrated infrastructure."

By combining all communications services on a single network, HIAE would be able to introduce new applications that supported different ways of working while also lowering costs. "We wanted to develop applications using integrated voice and data, and we were interested in implementing some of those applications on IP phones, using the handsets like small PCs," says Arai. "This would give both staff and patients innovative ways of communicating, with resulting improvements in the standard of care and patient satisfaction."



### Network Solution

After a lengthy process of technical and cost/benefit analysis, the hospital decided to deploy a Cisco® infrastructure to provide network connections in each of its seven sites in the São Paulo area and between all seven facilities. These local and wide-area networks deliver reliable, high-speed access to telephone, computing, and PACS services, either on fixed or wireless links.

"After a lot of consideration, we decided that Cisco was the best platform available," says Arai. "We also discovered that we shared the same vision as Cisco, the idea of a network on which all services are integrated to provide greater intelligence and richer functionality."

HIAE has created a Cisco Medical-Grade Network that connects all employees to essential information and services, at any time, wherever they are working. A Medical-Grade Network provides the capabilities that meet the hospital's specific requirements for security, interoperability, availability, productivity, and flexibility. It supports patients, clinical staff, administrators, and, potentially, external partners and agencies by enabling them to exchange information more easily and quickly than ever before.

Cisco Catalyst® switches supply power, scalability, and resilience in the network core at the data center and throughout the hospital's distributed campus. These switches form the nucleus that enables HIAE to run its voice, data, wireless, and PACS services on the same infrastructure. HIAE has also migrated to Cisco security solutions, implementing firewalls for perimeter protection, virtual private network (VPN) services for remote access, and the Cisco IPS 4260 Sensor for intrusion prevention. These solutions are embedded in the network and increase the security level for doctors and patients.

Previously servers and other IT systems were distributed around the hospital's seven units. The new Cisco platform has enabled HIAE to locate all these devices in one data center and centralize services such as PACS for the first time. Instead of having separate systems for each medical faculty, authorized members of staff can now view every image on the PACS system anywhere in the hospital. This saves a great deal of time and is helping to improve patient care by enabling clinicians to securely access data and make decisions more quickly.

**"Our goal is to improve productivity for our clinical staff and allow them to spend more time caring for patients."**

— Sergio Arai, Chief Information Officer (CIO), Hospital Israelita Albert Einstein

Clinical staff at HIAE are always on the move, and many of them keep in touch with colleagues by cellular phones, an expensive and inconvenient form of communication. Doctors and nurses are now starting to use wireless IP phones that are connected to the Cisco network, making it possible to communicate more easily and free of charge, using four-digit extension numbers. The hospital also plans to replace all its pagers with wireless IP phones, giving clinical staff a more versatile device that is capable of two-way communications that will improve response times.

### Business Results

Consolidating four infrastructures into a single platform has reduced the hospital's IT management. In addition, the security and availability of the network have improved, giving even greater protection to confidential information and helping ensure that staff and patients can always access the services that they require.



As well as enabling IT devices and services such as PACS to be centralized, the new Cisco infrastructure has also given the hospital a platform on which to introduce several innovative applications. One of these is an application that enables HIAE to manage and locate its assets more efficiently, using radio frequency identification (RFID) tags and wireless networking.

With many thousands of medical devices, wheelchairs, and other assets constantly in demand throughout the organization, staff spend too much of their time simply locating items. The new application, developed using an AeroScout tracking solution, will help prevent the theft or disappearance of expensive equipment while increasing staff productivity.

"We are piloting the location application on 2000 assets initially, and we will do a cost/benefit analysis of the results," says Arai. "Our goal is to improve productivity for our clinical staff and allow them to spend more time caring for patients."

The same application will eventually be used for monitoring patients whose faculties are impaired, so that they remain in a secure environment at all times. It will also be used to control the temperature of refrigerators where medications are stored.

To improve patients' comfort, the hospital has already implemented an application that enables patients to control the air conditioning, lighting, curtains, and TV in their rooms remotely, using the IP phone. Patients are pleased with the system, developed by NEC, which is both convenient and easy to use. This level of satisfaction gives HIAE a valuable differentiator when patients are choosing which hospital to attend.

HIAE is reviewing several other applications, including one that uses barcodes on certain types of drug, to enable clinical staff to check and control patients' prescriptions and to automate inventory control. The goal is to further enhance security and patients' safety by reducing the margin for error. Another potential application for IP phones is an automated process that alerts all the relevant hospital staff when a patient is about to be discharged.

"We needed a resilient and integrated platform on which to run new clinical applications, and we now have it," says Arai. "With voice, data, and wireless all combined in a single architecture, we are now able to introduce innovative services that support our clinical and business objectives."

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## Next Steps

The hospital's immediate priorities are to introduce the asset management application and to deploy the communications infrastructure in the new buildings. Alongside those projects, work will begin on creating new services that will extend HIAE's healthcare community beyond the hospital campus.

"This infrastructure will make it possible to deliver more and more services to our clinical staff in future, both inside the hospital and also externally," says Arai. "The network has been able to support everything we have done so far, and I see no constraints on what we can do in the future."

## Product List

### Routing and Switching

- Cisco 3845 Integrated Services Router
- Cisco Catalyst 3560, 4500, and 6500 Series Switches

### Data Center

- Cisco ACE 4700 Application Control Engine
- Cisco MDS 9000 Multilayer SAN Switches

### Network Management

- Cisco Works LAN Management Solution

### Security and VPN

- Cisco ASA 5550 and 5510 (Firewall and VPN)
- Cisco IPS 4260 Sensor

### Video

- Cisco Unified Video Advantage
- Cisco Unified IP Phone 7985

### Voice and IP Communications

- Cisco Unified Communications Manager
- Cisco Unified IP Phone 7900 Series
- Cisco Unified Wireless IP Phones 7920 Series
- Cisco Unified Contact Center Express

### Wireless

- Cisco Aironet® 1000 and 1130 AG Series Wireless Access Points
- Cisco Wireless Control System
- Cisco 4400 Series Wireless LAN Controller

## For More Information

To find out more about the Cisco Medical-Grade Network, go to:

[www.cisco.com/web/strategy/healthcare/all\\_medical-grade.html](http://www.cisco.com/web/strategy/healthcare/all_medical-grade.html).



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