

GE Healthcare
Technologies

Integrated Cardiology Workflow

Integrated IT Solutions



Tesseikai Neurosurgical Hospital runs centralised, multimodal heart center network with GE Centricity CARDDAS Xi²

The face of modern medicine is changing rapidly, and Tesseikai Neurosurgical Hospital needs to respond to these changes fast. The hospital's Circulatory Organs Department, which was recently set up, needed an updated and more efficient workflow in order to deliver quality cardiology administration, diagnosis and treatment to its patients. Turning to GE Centricity CARDDAS Xi², the hospital engaged state-of-the-art data management capabilities that will stand to serve its patients well into the next decade.

Challenge

- *As modern medicine become increasingly specialised, the hospital needed to keep updated in terms of modern medical technology in order to deliver quality medical care to its patients.*
- *Despite using advanced GE medical instruments and associated network environments in daily practice, the hospital still needed to centralise the management of accumulated data for ease of access and administration.*
- *In addition, Tesseikai Neurosurgical Hospital needed to upgrade its workflow with a more user-friendly database system in order to best align itself with the internationally popular concept of a "heart center network" for specialised circulatory organ treatment.*

Solution

- *GE Centricity CARDDAS Xi² offers a digital workflow that allows Tesseikai Neurosurgical Hospital to deliver highly specialised cardiology diagnoses based on the vast quantities of data that have been accumulated using advanced instruments and networks.*
- *In addition, Centricity CARDDAS Xi² permits the centralised management of data by coupling all GE medical instruments, allowing the hospital to construct a network encompassing all of the instruments required in a circulatory organ department to form an ideal cardiology diagnostic system.*



"We adopted GE's Centricity CARDDAS Xi² system as a tool to realise highly specialised circulatory organ treatments by improving work flow and team medicine practice."

– Dr. Akihiro Shirasaka
Circulatory Organs
Department
Tesseikai Neurosurgical
Hospital of Shin-Ai Kai

Assessing the Situation

Founded as a neurosurgical hospital in Shijonawate City, Kitakawachi district in the eastern part of Osaka prefecture 20 years ago, Tesseikai Neurosurgical Hospital has gained an esteemed reputation as a pioneer in neurological treatments over the decades.

With the creation of a brand new Circulatory Organs Department recently, the hospital now looked to carving a new niche for itself in advanced cardiology diagnosis as well as treatment and has spared no effort in crafting the facilities and procuring the best talents to achieve this aim.

At present, the hospital's Circulatory Organ Care Unit consists of a CCU (5 beds) and ICU (11 beds) and a Circulatory Organ Ward with 42 beds (of which 4 beds are HCU).

In addition, Tesseikai Neurosurgical Hospital also makes use of highly advanced diagnostic instruments such as angio-computed tomography (CT), intravascular ultrasound (IVUS), electrocardiograph (ECG), including standard 12-lead ECG, stress ECG, and Holter ECG as well as echoes (echocardiogram and vascular echo) as key patient monitoring instruments.

However with such advanced multimodal instruments, it is not possible to manage the correspondingly large volumes of data efficiently. And despite the state-of-the-art diagnostic setup, the hospital was still lacking a qualified system to collect, store and administer all its data.

In fact, Tesseikai Neurosurgical Hospital was still using electronic medical charts in cardiac diagnosis while video images have become increasingly widespread in the medical industry, especially in the area of circulatory organ medicine.

Dr. Akihiro Shirasaka from Tesseikai Neurosurgical Hospital's Circulatory Organs Department pointed out that this was turning out to be a bottleneck in the productivity and efficiency of the doctors in his department.

"We all felt the limitations of seeing patients in an environment where simple electronic charts were mainly used. Furthermore, our ECGs are scanned and stored in PDF format, and the start-up process requires some time, making it difficult to make quick comparisons with past ECGs," says Dr. Shirasaka.

"Modern medicine is becoming increasingly specialised, and in keeping to the older system, we constantly run the risk of failing to discover minute changes in the clinical conditions of our patients," he adds, "As a result, we decided that a system capable of collectively managing multimodal data would be essential in order to offer more advanced medical services."

For Dr. Shirasaka and his colleagues, the answer lay in deploying Centricity CARDDAS XI², leveraging its data management capabilities to collate data from the hospital's numerous instruments and direct the hospital's workflow towards greater efficiency and productivity.

"Centricity CARDDAS XI² allows us to perfect our team approach to medicine by giving our doctors the ability to view the various modality images through a centralised network regardless of whether they are in the hospital, enabling a comprehensive diagnosis of the patient's clinical condition."

– Dr. Akihiro Shirasaka
Circulatory Organs
Department
Tesseikai Neurosurgical
Hospital of Shin-Ai Kai

Spotlight: Tesseikai Neurosurgical Hospital of Shin-Ai Kai

- Tesseikai Neurosurgical Hospital was founded 20 years as a neurosurgical hospital in Shijonawate City, Kitakawachi district in the eastern part of Osaka prefecture (an area adjacent to both Kyoto and Nara prefectures).
- The hospital created a new Circulatory Organs Department recently after its relocation to new premises.
- Although Tesseikai Neurosurgical Hospital serves as a general hospital with 305 beds, it is now best known for its Neurosurgical and Circulatory Organs departments.
- The hospital's Circulatory Organ Care Unit consists of a CCU (5 beds) and ICU (11 beds) and a Circulatory Organ Ward with 42 beds (of which 4 beds are HCU).
- As there is no municipal hospital in Shijonawate City, Tesseikai Neurosurgical Hospital has become the city's main medical facility, having added a Paediatrics Department at the request of the city.

**Source: Tesseikai Neurosurgical Hospital of Shin-Ai Kai

Key Technologies

- GE Centricity CARDDAS XI² run the entire Tesseikai Neurosurgical Hospital's diagnostic workflow, digitally storing clinical information collected by ECGs, Cath Lab Images, X-rays, and IVUS, as well as automating paperwork such as the preparation of diagnostic reports.



Integral Answers

- Solutions provider GE Yokogawa Medical Systems' team worked closely with Tesseikai Neurosurgical Hospital staff to ensure the worry-free setup of the Centricity CARDDAS XI² system.
- Choosing Centricity CARDDAS XI² gives Tesseikai Neurosurgical Hospital the digital, automated workflow it needs to deliver quality medical services with the assurance of state-of-the-art medical technology.
- Centricity CARDDAS XI² delivers the digital headroom for Tesseikai Neurosurgical Hospital to respond to cardiology practice in the new age, allowing the hospital to adopt a team approach to medicine even when all its doctors cannot be present at the same time for tests and diagnosis.

Delivering the Solution

As Tesseikai Neurosurgical Hospital was already using GE diagnostic instruments, the transition to Centricity CARDDAS XI² was rendered all the more simpler.

Compared with using other network systems, Centricity CARDDAS XI² made it easier for the hospital to pair data from multimodal GE products such as ECGs, Cath Lab Images, X-rays, and IVUS GE's compliance with industry standards, and the depth and breadth of knowledge in the Cardiology environment.

This enables the hospital to leverage Centricity CARDDAS XI² functionalities to create a cardiovascular system capable of integrating, collating and redirecting all the data acquired, achieving a heart center network concept that has become a widely accepted international healthcare standard.

"The Centricity CARDDAS XI² system permits centralised management of data by coupling medical instruments. It has always been difficult to create centralised management using network systems available from other companies due to the differences in their specifications," says Dr. Shirasaka.

"And since GE was the only manufacturer offering a product that enabled the construction of a network encompassing all of the instruments required in a Circulatory Organ Department from the ECG to the Cath Lab for cardiac catheterization, we decided to adopt the Centricity CARDDAS XI² to realise our ideal circulatory organ diagnostic system," he adds.

And the results spoke volumes.

The Centricity CARDDAS XI² system makes it possible for Tesseikai Neurosurgical Hospital doctors to display patient test results for various modalities simultaneously. As a result, patients and their families who are shown video imaging data of the results of their Cath Lab and ECG tests in hospital wards are able to understand their clinical conditions easier.

The hospital's improved workflow also contributes to its team medicine approach, enhancing the efficiency of its doctors along the entire workflow chain. As it is impossible for all members of the team to be present at all of the tests and cardiac catheterization procedures, the Centricity CARDDAS XI² overcomes this problem by allowing member doctors to view various modality images through the network regardless of where they are in the hospital, enabling a comprehensive diagnosis of the patient's clinical condition.

Return on Investment

- GE Centricity CARDDAS XI² links multimodal instruments together, allowing for the centralised management of diagnostic data and generating cost-savings for the hospital in terms of time and labor expenditure.
- The automated functionalities of Centricity CARDDAS XI² also eases paperwork generation, allowing doctors to produce more accurate reports in the same amount of time it took to manually prepare a similar report previously.
- Through the Centricity CARDDAS XI² system, Tesseikai Neurosurgical Hospital is able to adopt a team approach toward cardiology testing and diagnosis even when all team doctors could not be present at the same time, reducing coordination efforts and boosting productivity across the board.
- Tesseikai Neurosurgical Hospital can also focus on staff education with the Centricity CARDDAS XI² system in place, raising the level of staff understanding as well as the quality of medical and nursing care provided.
- With the Centricity CARDDAS XI² system, the hospital is now able to better explain diagnoses to patients, allowing for better doctor-patient communication.

**Source: Tesseikai Neurosurgical Hospital of Shin-Ai Kai

“The Centricity CARDDAS XI² system organically links all phenomena together, helping to construct a complete picture of the patient’s condition and raising our operational efficiency.”

– Dr. Akihiro Shirasaka
Circulatory Organs Department
Tesseikai Neurosurgical
Hospital of Shin-Ai Kai

The Centricity CARDDAS XI² system further makes it possible for Tesseikai Hospital to conduct on-the-job staff training, allowing nurses and other staff members to participate in a virtual experience of the medical examinations carried out, raising their level of understanding as well as the quality of medical and nursing care subsequently delivered.

However, the most obvious improvement is in the preparation of diagnostic reports.

Centricity CARDDAS XI² allows doctors to integrate Cath Lab images, network system data, and catheterization reports into a single report, saving doctors much effort while improving the overall accuracy of reports.

“Previously, information on events during catheterization and device information had to be input manually. However, the Centricity CARDDAS XI² system will not only input these data automatically, but will also automatically record blood pressure and a waveform snapshot from the Haemodynamic monitoring. Information on the drugs administered will also be automatically input from the polygraph in real-time and reflected on the event log. These features have greatly improved our workflow,” says Dr. Shirasaka.

By adopting the GE Centricity CARDDAS XI² system, Tesseikai Neurosurgical Hospital has not only improved its cardiology administration, diagnosis and treatment workflow but also refined its team medicine approach in the highly specialised treatment of circulatory organ disorders.

Even with limited staff members along the workflow chain in Tesseikai Neurosurgical Hospital’s Circulatory Organ Department, the Centricity CARDDAS XI² system has proven its mettle consistently, showing that while the face of medicine changes rapidly, the strategic deployment of technology can allow doctors to keep up with the pace and come up tops in the delivery of quality medical care.

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