

GE Healthcare
Technologies

Integrated Cardiology Workflow

Integrated IT Solutions



Kanoya Heart Center maximizes medical service levels in rural Japan with GE Centricity Carddas Xi²

Osaka-born Dr. Hidekazu Arai had a vision – A vision to contribute to a healthy and sustainable future in Japan’s Osumi peninsula through the advanced treatment of cardiac disease.

Previously, quality medical services had been generally unavailable in rural Osumi due to the relatively small number of cardiac patients compared to bigger cities such as Tokyo, but Dr. Arai wanted to change all that.

Working on the belief that patients living in rural areas should not have to compromise on the quality of medical care, Dr. Arai started to look for means to provide advanced cardiology services for heart patients when he first arrived at the Osumi city of Kanoya in 2000.

His search led him to set up the Kanoya Heart Center in 2006, which leverages on state-of-the-art information technology (IT) from GE to deliver prompt, effective and service-oriented treatment to his patients.

Challenge

- *Dr. Hidekazu. Arai wanted to set up a heart center that offers Percutaneous Coronary Intervention (PCI) to patients in rural Osumi.*
- *In doing so, Dr. Arai had to figure out a management system where he was the only doctor working with a small number of staff without compromising on medical service quality.*
- *In addition, Dr. Arai had to contend with medical staff who were generally untrained in specialized circulatory organ treatment.*

Solution

- *GE Centricity Carddas Xi² offers a digital workflow that allows Dr. Arai’s Kanoya Heart Center to operate with a reduced number of staff yet offer specialized medical services at comparable quality to larger hospitals.*
- *In addition, through the Centricity Carddas Xi² system, all information is shared amongst the staff at Kanoya Heart Center, accounting for an accelerated pace of skill acquisition and compensating for the lack of prior experience in circulatory organ treatment on the part of the Center’s co-medical staff.*



“I have never heard of any other centers attaining profitability in just two months. Most are still pumping money into the operation at that stage. This is proof that both initial and ongoing employment costs have been successfully reduced through the adoption of the Centricity Carddas Xi².”

– Dr. Hidekazu Arai
Center Director
Kanoya Heart Center



Assessing the Situation

Having worked in the Osumi-Kanoya Hospital for six years before setting up the Kanoya Heart Center, Dr. Arai is keenly aware of the medical environment in Osumi.

With a smaller number of heart patients and no cardiac surgery department, the Osumi-Kanoya Hospital has been unable to provide PCI, an array of procedures used to treat patients with diseased arteries of the heart, even though there were doctors who were capable of performing the complex procedures.

To address the situation, Dr. Arai worked to set up a cardiac surgery department in Osumi-Kanoya that will make it possible for patients to undergo PCI.

However, it was not long before Dr. Arai felt that he had to move on to greater challenges – And that involved delivering even greater quality of medical care to his patients.

One of the first issues Dr. Arai needed to face was the general trend of centering advanced medical services in urban areas, where there is a higher concentration of patients that will justify a concerted medical investment.

To counter that trend, Dr. Arai chose to set up his own practice with the Kanoya Heart Center, which focuses on delivering PCI services with a lean staff.

“Hospitals located in low population areas naturally see smaller numbers of cases, which is why I have chosen to establish the Center on my own. In doing so, I needed to work out a management system where I was the only doctor working with a small number of staff without compromising on quality,” says Dr. Arai.

“However one major challenge was that there were fewer people who were qualified to work in medicine in Kanoya. None of the allied health medical staff working here had any specialized experience in circulatory organ treatment, and most people responding to my recruiting advertisement through the unemployment office only had experience in general medicine,” he adds.

This made it hard for Dr. Arai to make a large human capital investment. Yet the doctor needed to find a way to provide medical care on levels just as high as in large cities.

The solution was to rely on IT, and Dr. Arai turned to GE Centricity Carddas Xi² for answers.

“The Centricity Carddas Xi² system saves precious floor space and increases the efficiency of image management as well as diagnostic duties, eliminating the need for numerous doctors and co-medical staff.”

– Dr. Hidekazu Arai
Center Director
Kanoya Heart Center

Spotlight: Kanoya Heart Centre

- Established in October 2006, the Kanoya Heart Center is located in Kanoya City, Japan, a city with a temperate climate in the middle region of the Osumi peninsula in the Kagoshima Prefecture.
- The Center was founded by Dr. Hidekazu Arai, who aims to deliver quality medical care similar to service levels in large hospitals at major Japanese cities and contribute positively to a healthy and sustainable future through cardiac disease treatment in Osumi.
- To date, the Kanoya Heart Centre is a state-of-the-art heart centre structured specially around the needs of cardiac patients who look for specialized treatment with high quality levels.
- Dr. Arai continues to leverage the advanced functionalities of Centricity Carddas Xi² for Kanoya Heart Center, pursuing his dreams of seeing the emergence of a completely new mode for medical care in Japan and even worldwide.

Key Technologies

- GE Centricity Carddas Xi² run the entire Kanoya Heart Center's administrative, diagnostic and treatment workflow, digitally storing clinical information collected by electrocardiographs (ECG), echo-cardiography, X-rays, and CAGs, as well as automating paperwork such as care plans during hospitalization and hospital discharge reports.



Integral Answers

- GE Healthcare's team worked closely with Kanoya Heart Center staff to ensure worry-free setup and subsequent ongoing remote maintenance services.
- Choosing Centricity Carddas Xi² gives Kanoya Heart Center the digital, automated workflow it needs to deliver quality medical services comparable to service levels in large hospitals.
- Centricity Carddas Xi² delivers the digital headroom for Kanoya Heart Center to respond to clinical practice in the new age, allowing the Center to operate with significantly less staff than the four to five doctors and a larger number of co-medical staff typically required in a hospital's circulatory organ department.

Delivering the Solution

Deploying a suite of solutions that include Centricity Web, an online-based upgradeable viewer software; GE 16th MDCT, a high resolution computed tomography (CT) scanner; and Angiography Innova 2100^Q, a co-medical-friendly cardiovascular imaging instrument, the Kanoya Heart Center opened its doors to the public in October 2006.

And within two months, the Center had not only showed a steady increase in patients from 9 patients in October, to 15 patients in December, but has also turned around its operations fully to become profitable in the same period.

Dr. Arai could not be happier, "The financial breakeven point at my Centre has been extremely low. Of the heart centres that have opened recently, mine is one of the largest in terms of square footage. However, even in October when we only performed 10 PCI, we were able to break even."

"The critical point to note was, after only two months of operations, I had been able to return the principal and pay the lease fees after treating only 15 PCI cases in December. And there was still enough remaining funds to cover our income!" he adds.

Dr. Arai credits the Centricity Carddas Xi² deployment for the Center's amazing turnaround that has allowed him to fulfil his dream of delivering quality medical care to rural Osumi.

Doctors specializing in circulatory organs often carry out treatment based on massive volumes of clinical information collected by electrocardiographs (ECG), echo-cardiography, X-rays, and CAGs, and are also required to fill out paperwork, such as care plans during hospitalisation and hospital discharge reports.

Where it is not possible to manage such large volumes of data with a small staff and still keep service levels up, Dr. Arai acknowledges this is where Centricity Carddas Xi² came to the rescue.

Centricity Carddas Xi² allows doctors to fill out a medical certificate or return a report to the primary doctor regarding a referred patient by accessing information ubiquitously from a hospital ward, an outpatient clinic, or even from home.

Return on Investment

- GE Centricity GE Centricity Carddas Xi² reduces manual paperwork and eases patient data retrieval for Kanoya Heart Center staff, saving both time and money for the Center.
- Through the Centricity Carddas Xi², Kanoya Heart Center is able to keep to a lean staff strength comprising one doctor, two radiographers, two physiological test technicians and one ME, allowing the Center to save approximately USD 330,000 a year on manpower costs.
- At current staff strength and GE Centricity Xi² deployment, Kanoya Heart Center not only sees 200 PCI cases annually, but also expects to be able to carry out up to 300 PCI procedures annually, marking room for even more business growth for the Center.
- With the Centricity Carddas Xi², initial setup costs and ongoing employment costs have been successfully reduced at the Kanoya Heart Center. Despite being one of the largest heart centers in terms of square footage, the Center has been able to achieve profitability in just two months after it began operations, a prospect other heart centers have been unable to achieve.

“GE is the only company with a comprehensive proposal centered around a support system for circulatory organ diagnosis. That is why I feel reassured in having only a single brand of products at my Center.”

– Dr. Hidekazu Arai
Center Director
Kanoya Heart Center

“With these workflow enhancements, I believe the quality of the medical care I offer now is even better than when I was at the major hospital,” says Dr. Arai.

In addition, the ease of use of Centricity Carddas Xi² allows Dr. Arai to carry out staff training even whilst on the job, greatly reducing the learning curve for Kanoya Heart Center staff, who had no previous experience in circulatory organ medicine.

Centricity Carddas Xi² also allowed Dr. Arai to reduce labour costs and maximise space efficiencies through the innovative use of IT.

“Our Centre has been cost-conscious from the very start, and so we do not install cabinets to store medical charts or films. Space is money, and all our information is managed digitally. Furthermore, our staff consists of only one doctor, two radiographers, two physiological test technicians, and one ME. This saves us up to USD 330,000 annually,” says Dr. Arai.

But the most critical factor that Centricity Carddas Xi² lends to Dr. Arai and the Kanoya Heart Center is human-friendly IT that boosts the efficiency of the doctor such that more quality time can be spent with patients to lend much needed support and appraise patient condition more accurately.

This ultimately translates to the improved patient service that Dr Arai is looking for by setting up the Kanoya Heart Center.

“I believe IT is not heading in the direction of creating ‘cold’, mechanical tools, but ‘warm’ tools for the benefit of mankind. When one says that IT is used to enhance efficiency, you may get a cold, inanimate impression. However, the enhanced efficiency ultimately has given me more time to spend with my patients. Through the innovative use of IT solutions such as the Centricity Carddas Xi², I have realised a style of medical care that is friendly to both the elderly and people living in rural areas,” says Dr Arai.

“In essence, I believe that the business model for the Kanoya Heart Centre—namely, to provide medical services with a small staff without compromising quality—was a revolutionary idea. And I don’t think GE or I, or anyone for that matter, has realised the true potential of Centricity Carddas Xi². We may be on the verge of seeing a completely new mode for medical care emerging and I intend to focus single-mindedly on leveraging it to the greatest extent possible for my patients at the Kanoya Heart Center,” he adds.

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GE Healthcare Technologies—Transforming Cardiac Healthcare

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