Fukui-ken Saiseikai Hospital is a hospital of general medicine providing a base for local medical treatment, with a high level of satisfaction for patients and visitors, as well as actively using information and communication technology (ICT) to improve the work styles of employees. The hospital implemented Cisco DNA Center, taking advantage of this opportunity to renew the hospital’s information network. We are proactively rethinking the network and working to create a platform that allows us to implement the automation of future operations through innovative visualization and integrated management systems.

Fukui-ken Saiseikai Hospital has a philosophy of “thinking from the patient’s perspective” and works actively as a comprehensive medical facility to enhance and improve the level of local medical care. We focus on organization management to meet a variety of requests both inside and outside the hospital, while remaining in close cooperation with the hospitals, clinics, and nursing care centers in the community as well as patients and inpatients. The company has been highly acclaimed, having received the 5th Work-Life Balance Grand Prize and the 1st Frog Star (Cabinet Office) accreditation and was the first medical institution to receive the Japan Management Quality Award (large-scale division). The hospital is also active in utilizing ICT for the purpose of improving medical care and in-house operations, and Cisco products began being used in wireless LANs there in 2014. Cisco Identity Services Engine (ISE) has been introduced as a secure authentication infrastructure.
Challenges

- Reliance on electronic medical records that are not integrated into the information network, and inefficient operating costs and installation space
- Concerns that a wired LAN does not have an authentication base, and that a rogue terminal could be connected
- It is difficult to understand the situation and isolate the causes of wireless LAN failures, and the inability to detect rogue terminals leads to anxiety
- Vendor-dependent operation and maintenance hinders rapid responses and the improvement of IT literacy

Solutions

- The integrated network offered by the Cisco DNA Center aims to automate phased operational management
- Centralized management of the network topology, configuration, and settings
- Visualization of the network health status, including connected terminals (easily understood by the health score)
- Analyze data on the network to catch signs of trouble and quickly solve issues
- Support busy IT staff in day-to-day operations by analyzing problems and presenting solutions

Results and the future

- Integrated visualization of network operations helps improve the department’s IT literacy
- We aim to implement, as much as possible, operational management automation that reduces human intervention – such as data analysis and warning detection – using Cisco DNA Assurance, appropriate network access control complying with security policies, and threat countermeasures

Challenges

Mr. Tomoki Uesaka, head of the Medical Information Division responsible for the general information network in the hospital, says that the traditional network infrastructure had many challenges.

“Conventional networks relied on electronic medical records and were not integrated, and there are multiple systems that are configured individually and have the same functions, so there is a high workload and inefficient operating costs and use of installation space. In addition, compared to the wireless LAN implemented with Cisco ISE, there is no authentication infrastructure for the wired LAN, so there were concerns that unauthorized terminals could be connected to empty ports in conference rooms. As for the wireless LAN, it was difficult to understand the situation in cases of failures and to isolate the causes, and it was not possible to detect unauthorized terminals, so it had security issues.”

In examining the measures to address these issues, the company reached the conclusion that a drastic review of the future state of the network in the hospitals would be necessary, said Mr. Masaru Takeuchi, manager of the Corporate Planning division.

“Not only is it important to solve the problems that are emerging, but we also believe it is essential for us to have a safe, secure and innovative network that we can lead ourselves in the future.”

Masaru Takeuchi
Manager of the Corporate Planning Division, Fukui-ken Saiseikai Hospital, Social Welfare Organization Saiseikai Imperial Gift Foundation, Inc.
“The past networks have been left up to the vendors, and it took time and money to temporarily isolate and change settings during failures. Although the maintenance and operational rules were enacted, there was no room for review and improvement due to daily work, and documentation updates were delayed as well. Our inability to understand the state of the network ourselves is preventing the improvement of the IT literacy of the Medical Information Division. In the future, hospitals are becoming more and more digital, utilizing more data, and the number of devices that will be utilized will increase, so there is no doubt that the burden of operation maintenance and administration will increase. In order to help with that, we thought it was essential not only to solve the problems that are emerging, but also to upgrade to a network that is safe, secure, and self-directed for the future.”

In November 2018, the hospital conducted a comprehensive evaluation bidding through general competition. As a result of our evaluation of the proposals, costs, and maintenance, we decided to implement Cisco DNA (Digital Network Architecture), which includes a phased network operations management automation concept. Mr. Uesaka spoke about the reason for adopting Cisco DNA.

“To improve the IT literacy of the Medical Information Division staff and speed up services. The purpose is for the hospital to lead and plan the infrastructure that should be in place for the future, and to make a transition to implement it. First of all, we resolved the challenges in front of us, then we decided to proceed with our efforts to automate operations so that we could solve the problems dynamically, without human intervention.”
The aim is not to rely on electronic medical records, but for the hospital to lead and consider the necessary infrastructures, and make a transition to implement them.

How to view network faults in Cisco DNA Center
Cisco DNA Center can easily and quickly isolate faults.

Example: wireless access point malfunctions.

① Check the dashboard score for malfunctions.

② Click each icon to check the details.

③ Display faults in topology maps.
Solutions

In February 2019, the first phase of the information network renewal for the hospital began. The network comprises the Cisco Catalyst 9000 series for the core and server switches, the Cisco 5520 Series Wireless Controller for the wireless LAN controller, and the Cisco Aironet 3802 and 2802 for the access points. As a network operation management system, Cisco DNA Center and Cisco Prime Infrastructure (PI) have been adopted.

Early warning signs of trouble regarding the health of the network are detected to realize enhanced assurance

Mr. Takeuchi discusses the expected effects of Cisco DNA Center.

“First, we are going to build the infrastructure that is necessary for automation. The implementation of Cisco DNA Center provides for the centralized management of network configurations and real-time visualization. By constantly monitoring and analyzing the health of the entire network to quickly identify signs of trouble, it is possible to take proactive measures, thereby enhancing assurance. We are currently building the second phase, and the management for all floors and edge switches in an integrated manner will begin in the subsequent stages, but at this point it has been effective in problem solving for wireless LAN network issues.”

By visualizing the status of the network and devices, faster responses and failure prevention are realized

Mr. Hiroki Tanaka, head of the medical information division responsible for the actual operation, discusses the effects as follows.

“The control console of Cisco DNA Center detected a malfunction in the wireless access point, and the field investigation found that it was down due to poor contact of a power cable. Until now, trying to identify the causes of complaints has been difficult, and it took time and effort to contact each vendor. Cisco DNA Center enables the visualization of the state of the network and the devices, and it provides strong responses regarding the speed of correspondence and failure prevention.”

Results and the future

“In order to create new value, we need new infrastructure,” Mr. Takeuchi said, continuing about its effects as follows.

“As data and devices are being utilized in the medical field and in management, it is essential to be able to respond to IT needs faster, reduce operating costs, improve efficiency and increase security, in addition to the visualization and optimization of traffic, and the effort to simplify and automate management. By reducing the network operation workload of the staff in the Medical Information Division, the Information System Division can participate in meetings, make proposals for improvements through data analysis and statistics, provide appropriate data to management and medical sites, and improve the quality of medical care. In addition, the integrated visualization of network operations management, which had previously been left up to vendors, leads to an improvement in the IT literacy of the members of the departments.”
Mr. Tanaka discussed future developments as follows:

“First, we will gather the information necessary for automation and construct an analysis system. The next step is data analysis and warning detection using Cisco DNA Assurance. At the same time, we plan to provide appropriate network access controls and threat protection in compliance with security policies. Ultimately, we aim to realize the automation of operations management, which reduces human intervention as much as possible.”

At the end, Mr. Uesaka concluded the following: what is required of the hospital network and their expectations for Cisco.

“With the digitization of medical sites and the decrease in the working population, it is important to determine what needs to be taken over from the current requirements and to identify, resolve, and reduce constraints. In doing so, it is important to prepare the things that will be needed based on future requirements, such as the business background and the latest technological trends. With Cisco, we have always worked together to share the latest trends. We are looking forward to their providing solutions that contribute the improvement of management, and above all, patient services in the field.”

As a core hospital in Fukui Prefecture, Fukui-ken Saiseikai Hospital is committed to providing safe, secure, and high-quality medical treatment, with the philosophy of “thinking from the patient’s point of view.” In addition, the organization introduced a unique system, called the Saiseikai Quality Management System, to continue to improve and grow the organization, and shared their philosophy and values with all the employees to create a flat organization and practice medicine as a team. Furthermore, under the idea that the “differences between hospitals are the differences between staff members,” we are also implementing a variety of initiatives to improve staff satisfaction, including the introduction of work-life balance measures and the enhancement of educational support and welfare programs. The company has been acclaimed by third parties with the 5th Work-Life Balance Grand Prize Award and the 1st Frog Star (Cabinet Office) accreditation and was the first medical institution to receive the Japan Management Quality Award (large-scale division).

URL https://fukui-saiseikai.com/

Products and services

- Cisco DNA Center
- Cisco Prime® Infrastructure (PI)
- Cisco® Catalyst®
  9500 Series Switches
- Cisco Catalyst
  9300 Series Switches
- Cisco Catalyst
  9200 Series Switches
- Cisco Aironet®
  3800/2800 Series
- Wireless LAN Access Point
- Cisco 5520 Wireless Controller
- Cisco Aironet
  1800s Active Sensor