

**CASE STUDY:**

# Kariya Toyota General Hospital, Japan

457-bed hospital installs its fifth Toshiba RADREX-i Dual Panel DR System to handle up to 5,000 patients a day.



Kariya Toyota General Hospital

Kariya Toyota General Hospital is a new state-of-the-art 457-bed hospital and a technological marvel complete with earthquake absorbing structures so it can remain operational in times of emergency. About 10% of the patients are affiliated with the Toyota group. The hospital can be reached by bullet train from Tokyo in about 2 hours.

One of main reasons they needed a fifth RADREX™-i digital radiography system was because of the hospital expansion to serve over 5,000 patients per day. Dr. Mizutani, Radiology Manager, and Mr. Sano, Technical Department Manager of the hospital, explain the main reasons they bought a fifth Toshiba RADREX-i dual panel digital radiography system and some of the benefits they have experienced with the RADREX-i system.

**REASONS FOR BUYING A FIFTH RADREX-i**

Mr. Sano explains: “The RADREX-i has many wonderful features, one of which is the high quality images which can be obtained without changing a cassette. The physical size of the system has been reduced compared to other systems by combining the x-ray generator and the digital processor into one console, reducing the required installation space for the system. This was also in line with our more spacious working environment theme which has been incorporated into design of the new building of the hospital. After installing the initial RADREX-i systems, easy diagnosis through improved image quality was achieved, the level of patient care from our radiographic staff was improved and our examination workflow was streamlined.

This increase in department efficiency has also led to great reductions in patient waiting times before and after the examination. Our statistics show that productivity has improved a great deal since these rooms have been installed. Doses were also dramatically reduced to both patients and staff.”



Dr. Mizutani (Left) and Mr. Sano (Right), with the RADREX-i.

**REDUCTIONS IN DOSE**

“The RADREX-i has reduced dose to the patients by more than 30% compared to our CR system (Chart 1),” says Mr. Sano. “For pelvic examinations of pregnant women, more than a 90% dose reduction was achieved using the Toshiba DR system (Chart 1). Pediatric examination doses were also drastically reduced (Chart 2). Some other

DR systems also boast features which aid ergonomics and comfort for the patient, but the RADREX-i has additional features which improve safety to comedical and radiographic staff.” Staff at the Kariya Toyota General Hospital explain, “The RADREX-i lowers patient input dose, staff recorded doses and has much higher image quality than our CR system. It is a great system for the patient and also for us.”

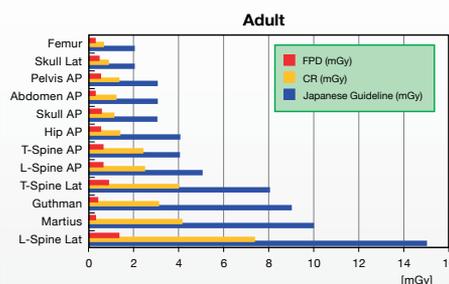


Chart 1 Adult Dose

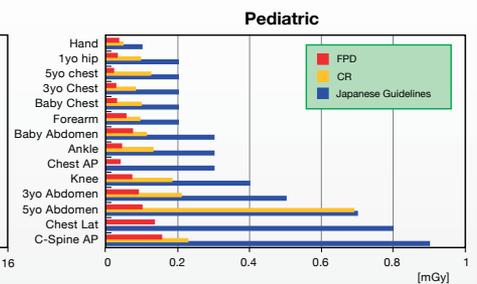


Chart 2 Pediatric Dose

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### STREAMLINING EXAMINATION WORKFLOW

In Kariya Toyota General Hospital, almost all general examinations are performed using the RADREX-i dual panel DR system. Mr. Sano explains, "The RADREX-i has high image quality and at the same time it is very easy to operate. Less than 3 seconds after exposure, the image is displayed in the examination room on an LCD screen on the front of the x-ray tube which Toshiba has named REXVIEW. Workflow has improved because radiographers move into the room directly after exposure, and patient care has also improved because the radiographer does not have to wait outside the exam room at the system console to review the image but instead is now inside the examination room with the patient when they are reviewing the image."

Staff in the Department of Radiology explained that, "during the installation we received training on how to consistently



Radiographers Mr. Suzuki (Left) and Mr. Mizoguchi (Right) change the APC using the In-Room REXVIEW LCD Touch Screen Display.

obtain nice images. After mastering this procedure and workflow, the RADREX-i is a wonderful system to work with."

Mr. Suzuki says, "Workflow has improved because changing of cassettes is not required, and the workflow related to image and patient data connectivity is much more efficient. Patient selection from the RIS connection automatically links the

examination or multiple accession number examinations for the Radiographer. Radiographers can also select other views to be added to the current examination, or change system parameters from in the room or at the main console. Features such as the name display on the vertical stand, and name and exam position display in room also helped to reduce operator errors relating to mistaken identity, or mistaking left for right imaging, and so on to almost 0%."

Mr. Sano explains, "The workflow improvements provided by the Toshiba RADREX-i DR systems have also reduced the per patient examination times by a large margin according to our statistics. There are now very few patients who wait more than 20 minutes for a general radiographic examination, which is a vast improvement on previous waiting times."

### IMAGE QUALITY

Dr. Mizutani states that, "The image quality from the RADREX-i FPD systems are extremely high when compared with CR. For example with chest radiography, the mediastinum is demonstrated well and in the same image diagnosis of lung fields is extremely easy. This Toshiba DR system has definitely made diagnosis easier with impressive image quality."



At right, a chest X-ray performed at Kariya Toyota General Hospital.

### CONNECTIVITY TO RIS AND PACS

The Department of Radiology adopted RIS and PACS systems ten years ago. These systems are linked well with the new RADREX-i DR systems, leading to increased efficiency in workflow owing to the digitization of all systems. Mr. Sano explains, "all systems are shifting to FPD, owing to the efficiency, accuracy, reliability and safety of digital systems. Toshiba's connectivity helps make statistical analysis easier, minimizes user errors, and allows delivery of images to care providers in the wards in a timely fashion, improving overall patient care."

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