

Stable Image Quality and Compact, Easy-to-Use Unit Supports Upper Gastrointestinal Series at Large Medical Checkup Facilities



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■ Comprehensive equipment for sophisticated and high-quality medical activities

Located in Kita-ku, Osaka, Japan, the Sumitomo Hospital offers 499 clinical beds and operates under the principle of "Offering Reliable Medical Care to Society" to offer high-level, quality medicine that stresses the quality of life of patients. The hospital was reopened in September 2000, with upgraded equipment and in-house systems, to provide sophisticated and high-quality medical activities.

The Sumitomo Hospital incorporates a health care center as a medical checkup facility for comprehensive medical checkups (inpatient and outpatient health screening). The center performs legally prescribed periodic physical examinations for corporations and periodic physical examinations for individuals, as well as VDT examinations, a type of industrial health check, with the cooperation of specialists from other departments. The health care center is designated as a superior health screening facility by the Japan Society of Health Evaluation and Promotion and the Japan Hospital Association. The 14th floor with great views provides an excellent environment for medical checkups. In good weather, you can see as far as the Akashi Kaikyo Bridge.



■ Upper gastrointestinal series for health screening in the health care center

We previously used an I.I.-DR system for health screening. However, we had to upgrade our general radiography systems to flat panel detectors (FPDs) this year because the I.I. brightness had deteriorated and the X-ray exposure dose to the patient increased. We used this opportunity to upgrade to two FLEXAVISION F3 package digital R/F systems. Operating the system involves receiving the patient order in the DICOM Modality Worklist Server and transmitting all image data after radiography to the viewer for display on monitors.

We currently use these two systems to conduct 30 to 35 upper gastrointestinal series per half day, or 6,000 to 6,500 per year. The systems are used to perform opportunistic screening, with almost 20 images per



examination. We commenced cancer screening for Osaka City in November and expect the number of examinations to keep on rising in the future. In addition to upper gastrointestinal series, we also perform cervical spine radiography for VDT examinations.

■ Image customization ensures adequate image quality

The FPD eliminates the distortion associated with image intensifiers and simplifies observations over a wide field of view. The image quality is also satisfactory. In medical checkups, we compare previous years' images with images from the F3 package, which clearly shows an improvement in the image quality.

The images are extremely clear, with excellent sharpness and contrast but little halation. With the conventional I.I.-DR system, despite repeated adjustments, detail in images drops out and turns black, making the images partially unreadable. With the F3 package, on the other hand, adjusting the parameters to achieve good image quality eliminates the drop-out and blackening, allowing the captured images to be interpreted directly. Upper gastrointestinal series are handled by ten technologists in rotation. Although the image quality used to vary according to the technologist, the ability of the F3 package to allow the parameters to be preset before radiography now ensures stable image quality. This virtually eliminates the need to repeat radiography. Re-imaging is now only required if the patient has moved. Even in such a case, as the F3 package continuously displays images as thumbnails on a monitor, they can be observed after radiography is complete, allowing re-imaging to be performed immediately.

At this hospital, we have implemented policies to reduce the X-ray exposure dose to the patient during examinations. Accordingly, we utilize masks and pulsed radiography offered as standard by the F3 package, which still allows us to obtain smooth images.

■ Compact unit ensures adequate workspace in the examination room

The compact design of the main unit allows it to be easily installed in a small space. The table remains vertical during standby to reduce the space it occupies. Previously, the X-ray tube hindered the patient's movement after opening the door. The new system solves this problem.

Furthermore, as the FPD is much thinner than image intensifiers, the X-ray tube does not need to be returned to foot direction when the table is tilted to the Trendelenburg position (with the feet higher than the head). We usually tilt the table to the Trendelenburg position during examinations and find this movement extremely smooth. Also, the larger range of motion of the imaging chain eliminates the need to move the patient.

■ Many features to support examinations

The more compact system allows a control console to be installed in free space in the examination room to operate the system from inside the examination room. This provides appropriate support for patients requiring physical support during the examination.

The nurses often use the bedside controller. It conveniently allows them to tilt the table while standing next to the patient as they escort the patient to the table. Also, maintenance is now quite simple. The cover where the patient's face contacts the tabletop, for example, can be easily replaced for each patient. The table can be easily approached from the rear or any other direction during maintenance. The operation is much quieter than the previous system.



Bedside Controller

■ Backup for general radiography

The 14 × 17-inch FPD is one reason we like the F3 package. It could be used as a backup to the general radiography system on the same floor should it break down. In the event of a breakdown of the general radiography system while at medical checkup work, which cannot be halted, the F3 package eliminates the need for patients to descend from the 14th floor to the basement examination room. It is the perfect system for facilities that wish to also perform general radiography using a single system.

Advice to Doctors Considering Introducing this system

The F3 package is an easy-to-use compact system with a wide range of motion of the imaging chain. You can easily customize images by adjusting the image quality as required, which makes it even more attractive.