

Geisinger Health System

FCR Adds Efficiencies at Geisinger Health System

DANVILLE, PA: At Geisinger Health System, PACS preceded digital X-ray. Patient images acquired through other imaging modalities were quickly and easily accessible, but caregivers often had to wait overnight for X-ray images to be physically transferred from outlying clinics to the medical center in Danville.

The impetus to upgrade came from the health system's transition to an electronic medical record (EMR) system in 2001. With the EMR, physicians very quickly became accustomed to having near-instantaneous access to comprehensive patient records, including images stored on a PACS. Notably absent, however, were X-ray exams, which account for more than half of the 200,000 diagnostic studies conducted annually in the Geisinger Health System.

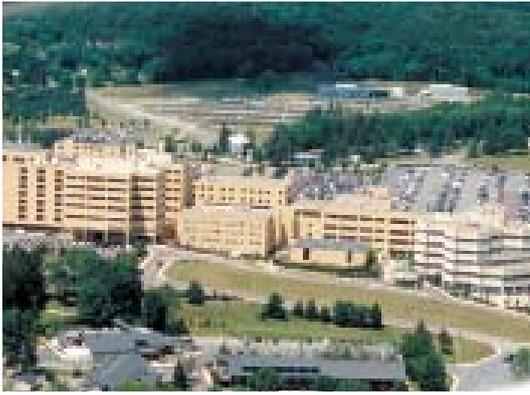
"All of our clinic physicians use the same medical record. They are used to having information at their fingertips," said Sally Womer, Geisinger's coordinator of quality improvement and business development for radiology. "The EMR was so quick and accessible that it called attention to how slow and outdated our manual process for handling X-rays really was."

Building a CR Network

The radiology group at Geisinger Medical Center – a level I trauma center – was the first to use FUJIFILM Computed Radiography (FCR) for trauma care. It selected the FCR 5000 high capacity, multi-plate CR reader, to handle imaging cassettes from four exam rooms. Since this addition, the group has also installed SmartCR[®]s, one to a room, as a distributed strategy. The SmartCRs were selected not only for the efficiency gains they afford, but also for the added control they allow technologists, who are now able to preview and adjust patient images right in the exam room, without ever leaving the patient. "Techs like having the responsibility for the image quality in their own rooms and having their own equipment to maximize their efficiency," Womer noted.

While an obvious advantage for technologists, FUJIFILM CR has definitely made life easier for radiologists at Geisinger Medical Center. With SmartCRs installed in both the pediatric ICU and the adult ICU, the long walks to those departments to read films have been eliminated. While this may seem a trivial matter, the pediatric ICU is a distance equal to two city blocks from the radiology department. Having digital radiographs available on the PACS keeps the radiologists at the workstation right there in the department – not down the street chasing films – and thus more productive.

FCR has also been installed at Geisinger Wyoming Valley Medical Center in Wilkes-Barre, supporting general diagnostic imaging and trauma, and at clinics in five locations scattered across central and northeastern Pennsylvania. In total, the health system has 10 SmartCRs plus an FCR 5000 high capacity reader.



Why FUJIFILM?

"The burning question every day of our lives is, how do you give the docs what they want? Our algorithms with FUJIFILM CR are customized to give you a beautiful image. Most would agree that with only occasional tweaking, we are able to keep them happy with the images they're delivered."

Sally Womer, Coordinator of Quality Improvement, Geisinger Health System

Geisinger Techs Go Cold Turkey

One of the key lessons learned during Geisinger's conversion process is that the day CR comes online, the film processor must be shut off. That is how it was done at the medical center in Danville, and despite the worries of some technicians, things went quite smoothly. "Our rule now is once we go to CR, film is completely gone. It works much better that way."

Geisinger technologists also learned that just because CR is more forgiving to over and under exposure than conventional X-rays, it doesn't mean that good technique isn't important. Because of the wider dynamic range of FUJIFILM CR, the number of repeat exams and callbacks automatically drops, but techs must still be sure they're optimizing the exposure for the particular exam.

It is in bone images that Geisinger physicians have noticed some of the most dramatic improvements in X-ray image quality. Bone images produced with conventional processing rarely show the trabecular pattern, which is now evident on the FUJIFILM CR images. CR also provides a good skin line, which is important to some readers because it represents the image more accurately.

Finding the Perfect Fit

When FCR was installed, FUJIFILM's professional services team worked with the staff to customize image processing algorithms for exams so that images are consistently processed according to the radiologists' liking. This reduces the number of adjustments that are needed by the technologists before images are transferred to PACS, since the first-up image display is the right one. Optimizing images according to the preferences of the radiologists also results in the need for relatively little manipulation of the dataset.

A PACS feature often used with the CR images is magnification of a region of interest. With the magnification feature, one click provides a close-up view. No detail is lost and no additional time is required.

Ultimately, the most important benefits of FCR relate to patient care, and at Geisinger, the difference is clear. Those caregivers who used to wait all day for a radiologic image, now receive it within minutes.



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Sally Womer, Coordinator
of Quality Improvement,
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Facility Facts

200,000 imaging studies per year
in Geisinger Health System

437 beds at Geisinger
Medical Center, the largest facility
in the system

27 FTE radiologists in the
Geisinger group

4 radiography rooms at Geisinger
Medical Center, down from a
previous total of 8

SmartCR - Sold as XG1 outside USA and Japan