

KODAK DIRECTVIEW CR SYSTEMS



University Hospital Reports KODAK
DIRECTVIEW CR System Platform Offers
Outstanding Image Quality, Productivity

HEALTH IMAGING
A BETTER VIEW OF LIFE.





Using a Kodak DirectView CR 800 system, Nana Ossei Owusu, RT, previews a composite image that was captured, stitched, and processed using the Kodak DirectView CR long-length imaging system.

When the University of Medicine and Dentistry of New Jersey (UMDNJ) began to install PACS, a team of representatives began to evaluate computed radiography (CR) systems.

"The selection of a CR platform is extremely important because it determines the image quality for general radiography exams and also significantly impacts departmental productivity and workflow," notes Richard T. Tunnell, UMDNJ's director of teleimaging for information services and technology.

"Even though we selected a GE Medical Systems PACS, we selected Kodak DirectView CR systems because of the platform's exceptional image quality and time-saving features like the Kodak DirectView remote operations panels. In addition, these CR systems integrated easily with our PACS," he says.

Image quality was a primary factor for the evaluation team. "The image enhancement provided by Kodak DirectView EVP software, and techniques like edge enhancement and applying a black surround to the images, dramatically improve presentation of the clinical data," he reports.

UNIVERSITY HOSPITAL REPORTS KODAK OFFERS OUTSTANDING IMAGE QUALITY,

KODAK DIRECTVIEW EVP SOFTWARE ENHANCES IMAGE QUALITY

"Kodak DirectView EVP software simultaneously increases latitude, while preserving contrast and image detail. It eliminates loss of detail in dense bone and other typically under-penetrated areas and provides excellent anatomical information for a diagnosis," says Corey Eber, M.D., radiologist and vice chairman of the Department of Radiology.

He adds that the enhanced image quality provided by EVP is evident on softcopy display and also when printed to radiographic film using Kodak DryView laser imaging systems.

UMDNJ has installed 16 Kodak DirectView CR 800 and 900 systems. The hospital's three CR 900 systems and eight CR 800 systems capture approximately 100,000 imaging studies a year and serve the radiology department, the ED/trauma unit, ICU/CCU and the operating room.

One CR 900 and three CR 800 systems are installed in the eight-story Doctors Office Center that houses the private offices of more than 100 staff physicians. These systems capture about 18,000 procedures a year. An additional CR 800 system is located in the New Jersey Tuberculosis Center, which is part of the nearby International Center for Public Health.



Chong Zhang, RT (ARRT), inserts one of the CR plates into the Kodak DirectView CR long-length vertical cassette holder. Software automatically stitches together the images to produce a single, composite image.

DIRECTVIEW CR SYSTEM PLATFORM

PRODUCTIVITY

PRODUCTIVITY IMPROVEMENTS

Staff productivity has been improved in several ways. First, retakes are now extremely rare. And radiologists also enjoy the benefits of softcopy display and manipulation.

"The latitude provided by CR technology, and the ability to enhance and manipulate the images, is a major benefit. In addition, the images are much more consistent in terms of density and are therefore easier for radiologists to read," says Dr. Eber.

Kodak DirectView remote operations panels also provide more efficient workflow. The wall-mounted panels, which are placed in examination rooms, allow technologists to enter patient and exam information, and verify image quality, without leaving the room.

Another time-saving tool is Kodak DirectView total quality tool software. This software is used with a phantom kit to verify that Kodak CR systems and cassettes are performing within acceptable parameters. A comprehensive set of tests can be conducted with just two controlled x-ray exposures. A phantom image enables the quality tool to calculate exposure response, resolution, and noise, while a flat-field image, exposed without the phantom,

allows the tool to evaluate artifacts and image erase function.

"We test all our Kodak CR systems every month, and the system automatically charts and stores the results," says Tunnell. "If we are experiencing any kind of performance

single workstation. In addition, Kodak DirectView CR systems are compact and use normal power supplies so they can be easily positioned in a hospital, doctors' office, or outpatient imaging center.

"The latitude provided by CR technology, and the ability to enhance and manipulate the images, is a major benefit."

problem, this testing can help us identify the most probable cause. This software also helps us detect and replace scratched or damaged cassettes."

CR PLATFORM "FITS IN ANYWHERE"

The all-in-one design and compact footprint of the Kodak DirectView CR system platform are also very important elements to improving workflow. "We can install a compact Kodak CR system almost anywhere, from nursing stations to ICU areas. And we can capture and view images in minutes," says Tunnell.

This "fits in anywhere" convenience is facilitated by the platform's ability for all functions including data entry and quality assurance to take place at a



Corey Eber, M.D., radiologist and vice chairman of the Department of Radiology at UMDNJ, evaluates chest images captured on a Kodak DirectView CR system. Eber says Kodak DirectView EVP software increases latitude, while simultaneously preserving contrast and image detail. This eliminates loss of detail in dense bone and other typically under-penetrated areas and provides excellent anatomical information for a diagnosis.

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Marielynda Richeme, RT (R), uses a Kodak DirectView remote operations panel associated with a Kodak DirectView CR 900 system to read the bar code on an image cassette. The panels, which are located in examination rooms, allow technologists to enter patient and exam information and perform image reviews without leaving the room.

TRADE TRIAL TESTING OF KODAK DIRECTVIEW CR LONG-LENGTH IMAGING SYSTEM

After conversion to Kodak CR systems for general radiography, UMDNJ was eager to convert long-length imaging to Kodak CR technology as well. This university hospital handles a large number of these exams because the staff includes a large number of orthopedic specialists and musculoskeletal radiologists. After conducting trade trial testing of the new Kodak DirectView CR long-length imaging system, the site purchased two systems: one for the hospital and a second for the Doctors Office Center.

The challenge with long-length imaging has always been to achieve even density from the hips to the ankles and provide optimal imaging of both bony and muscular areas. The Kodak CR long-length imaging system combined with Kodak EVP software produces virtually seamless long-bone images, achieves consistent overall density throughout the image, and enhances the presentation of clinically important information. "This system offers a great improvement over the film images we used previously," says Radiologist Marcia Blacksin, M.D, section chief of the hospital's musculoskeletal section.

The Kodak DirectView CR long-length imaging system features a wall-mounted vertical cassette holder with an innovative system in which each long-length cassette has a unique "key" that enables it to be inserted only when it is in the proper position. This system works in combination with Kodak DirectView CR 800 or CR 900 series systems.

"Kodak's design is superb. The cassettes only fit when inserted into the correct position, and the cassettes can be processed in any order because the system identifies each cassette's position. After 120 exams, we have not had a single retake," Tunnell reports.

The Kodak DirectView CR long-length imaging system stitching software boasts more than 99 percent stitching reliability and requires no user intervention.

CR SELECTION DESERVES ATTENTION

Like many other institutions, UMDNJ installed CR systems to provide digital image capture and to maximize the efficiencies of PACS. In speaking with other facilities that have been down the same path, Tunnell notes a surprising result: While many facilities create a thorough process to select and implement PACS, the selection of a CR platform is often an afterthought.

"Selecting the right CR platform is just as important as selecting the right PACS. Since CR systems normally capture more than half of any facility's imaging volume, this platform can dramatically impact the productivity and workflow of the department," says Tunnell. "There are differences among CR vendors in image quality, ease of use, workflow efficiencies, reliability, and support," Tunnell reports. "In our evaluation, Kodak's CR platform came out on top in every one of these categories."

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