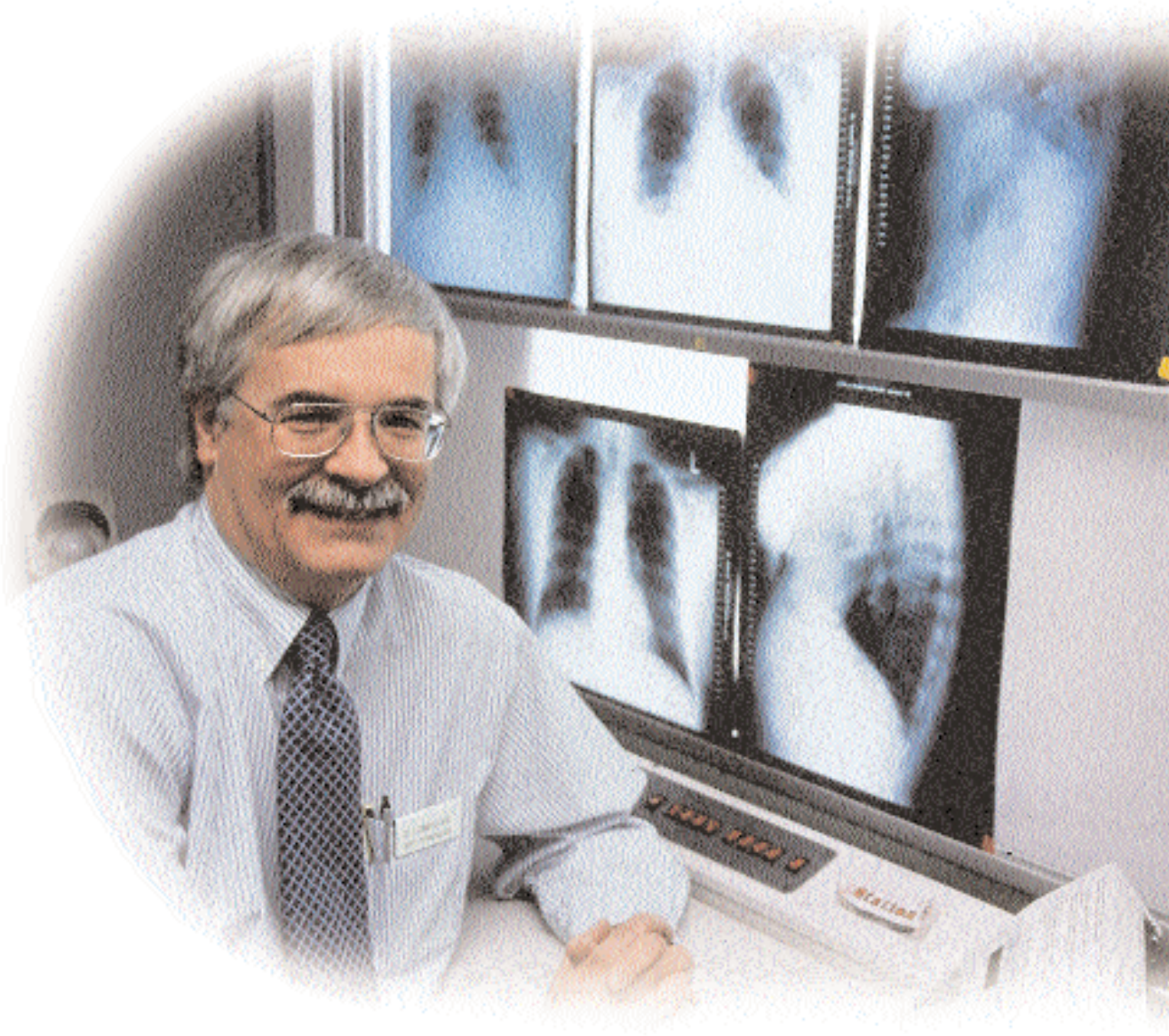

KODAK DIRECTVIEW DR 5000 System Offers Dramatic Workflow Gains at Indiana University Hospital.

As an administrative director, Stanley Metzger's goal is to provide the best possible diagnostic tools for Indiana University Hospital, while simultaneously balancing the need for faster throughput and reasonable operating costs.

Metzger has turned to digital imaging technologies—including a new digital radiography (DR) system—to achieve his ambitious goals.

Administrative Director Stanley Metzger supports the installation of digital technologies. He believes that "the gains in productivity and image quality that digital radiography can offer to high-volume environments offset its current price premium."

Radiology engineer Don Morning sets parameters for an exam on the hospital's new KODAK DIRECTVIEW DR 5000 system.

Indiana University Hospital is part of Indianapolis-based Clarian Health Partners, which also includes Methodist Hospital, Riley Hospital for Children, and four large outpatient facilities. IU Hospital conducts about 140,000 procedures a year, including MRI, CT, ultrasound, mammography, and projection radiography.

After installing computed radiography (CR) systems in ER and ICU departments, he has turned to a Kodak DirectView DR 5000 system to simultaneously speed workflow and improve the quality of chest studies.

"It was time to replace our chest-imaging equipment at these facilities. We believe DR has a lot to offer—both in terms of enhancing image quality and in minimizing the time required to process each study," he explains.

"The ability for a technologist to capture a digital image, select a patient's name on the monitor, and QC the image in just seconds is a revolutionary step forward," Metzger reports. "In addition, technologists don't need to leave the patient to process or check the images, it's all done at the system's operator console. And that's a tremendous advantage as well."

The DR system's 10-second preview and 35-second cycle time are also important to patient workflow. In fact, patient throughput for chest exams is up to 50 percent faster than with the previous film system.

Front cover: Dewey J. Conces Jr., MD, clinical director of radiology at Indiana University Hospital, conducted a thorough examination of DR technologies and systems prior to selecting the direct digital technology featured by the KODAK DIRECTVIEW DR 5000 system.

Focus on Detector Technology

Detector technology, and overall image quality, were the focus of intense scrutiny prior to selecting a DR system.

Dewey J. Conces Jr., MD, clinical director of radiology at Indiana University Hospital, conducted a thorough examination of DR technologies and systems. He reviewed data on Detective Quantum Efficiency (DQE), Modulation Transfer Function (MTF), and Nyquist frequencies for several vendors' DR technologies, in addition to examining medical images produced by these systems.

"After reviewing the scientific studies and looking at the images, I determined that the direct detector technology held clear advantages. The higher Nyquist frequency and MTF found with direct detector technology enhances visualization of fine detail and provides superior imaging performance," notes Dr. Conces. "In contrast, the signal profile and line-spread function show that greater image blur occurs with an indirect DR system."

Direct detectors automatically convert x-ray photons into electronic signals and produce highly precise signal profiles and resolution. Indirect detectors have an added step; they first convert x-rays into light, then convert the light to electronic signals. In the process, light scatter tends to degrade the signal profile and resolution.

After six months of use, Dr. Conces concludes that the direct receptor technology employed by the Kodak DR 5000 system provides "greater clinical detail than our previous film-screen system."

Kodak's Service and Support Critical to Success

Since several companies market the direct detector technology selected by Dr. Conces, the vendor selection fell to Metzger. "In my mind, the expertise and resources of the vendor are as important to a successful implementation as the quality of the technology," he notes. "This is a long-term investment for the institution. During our evaluation process, at least one vendor went out of business. We selected Kodak because they were the only vendor that offered a history in imaging, long-term stability, excellent service and support, and the best technology available."

As with any leading-edge technology, training and support were both critical. "The Kodak DR systems are easy to use and the training is minimal. It took about a week to get familiar with the equipment and the process. After several weeks, our technologists had forgotten all about film and processors," Metzger explains.

Kodak's service organization has also lived up to its reputation. "Kodak engineers worked closely with our project manager to ensure a smooth installation. The support staff has been very attentive, and has helped us optimize image quality and workflow."

Kodak also provides on-line monitoring of the DR system, which allows off-site engineers to detect, and correct, any issues before they cause problems.

DR Technology Part of an Overall Plan

While many facilities are still evaluating the merits of DR technology, Metzger believes it fills an important role.

Indiana University Hospital installed a KODAK DIRECTVIEW DR 5000 system to simultaneously speed workflow and improve the quality of chest studies. Here a technologist demonstrates the positioning of a patient for a lateral image with the new system.

"Converting the radiology department to a digital platform requires implementing either CR or DR technologies, or a mix of both as we have chosen. CR offers flexible digital capture at a reasonable price. As such, it's ideal for portable exams, ER and ICU, and other low-volume areas," he notes. "DR technology has broader applications. We believe that the gains in productivity and image quality that DR can offer to high-volume environments offset its current price premium."

In fact, the DR system at IU Hospital has performed so well that a second DR 5000 system has been installed to perform chest radiographs at the 775-bed Methodist Hospital, the largest and busiest facility in the Clarian Health Partners network.

"Kodak's DR system offers an excellent combination of image quality and productivity in a digital capture platform. We believe this is a compelling package for any progressive healthcare institution," Metzger notes.

Indiana University Hospital is part of Indianapolis-based Clarian Health Partners. The hospital is installing digital capture technologies, including computed radiography and digital radiography, as part of its plan to achieve a digital radiology department.

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