

REALISM™ lets radiologists visualize a new level of detail in DR



Cuero Regional Hospital and REALISM Software

After Cuero Regional Hospital implemented REALISM software, Konica Minolta Healthcare's next-generation advanced image processing software, repeat exposures in digital radiography dropped 20%*. Technologists no longer make adjustments on every image, increasing their efficiency and enabling a higher patient throughput. Radiologists' productivity and diagnostic confidence are significantly enhanced with the sharpness and clarity of images, including the ability to visualize bone and soft tissue in X-rays. And, patients receive exceptional quality care in shorter exam times.

Nestled between Houston and San Antonio in South Texas, Cuero Regional Hospital offers many of the same services as larger urban-based hospitals. The rural acute care facility has a 24x7 emergency room, a women's center, inpatient and day surgery units and an attached outpatient center to deliver exceptional care in a comfortable environment close to patients' homes.

With nearly 60% Medicare/Medicaid patients, Cuero Regional Hospital transitioned its three computed radiography X-ray rooms to digital radiography (DR) in late 2017 to avoid the reduction in reimbursement that would result from the Consolidated Appropriations Act of 2016.

According to Tyler Lemke, Director of Radiology, the hospital had been using Konica Minolta Healthcare CR systems since 2007. When it came time to upgrade the systems to DR, he naturally turned to the same company that he trusted for high quality and reliable X-ray imaging solutions.

"Image quality is the most important feature of our imaging systems for our radiologists to make a confident diagnosis, enabling our clinicians to deliver high quality and more personalized patient care," Lemke says.

Cuero Regional Hospital chose the new Konica Minolta AeroDR® wireless flat panel detectors, CS-7 workstations (Control Stations) and REALISM image processing, which provides superior visualization of soft tissue and bone structures in the same image. REALISM software delivers a new level of clarity and detail in X-ray imaging that improves the sharpness of fine details, enhances visibility of hard to penetrate structures, and delivers excellent visibility of high contrast images.

This level of image clarity is made possible because REALISM software processes bone and soft tissue data independently, revealing subtle details even in areas where bone overlaps soft tissue. By improving contrast sensitivity for excellent detail in high density structures while also optimizing detail in low density areas, the whole image is presented more clearly. The first time Lemke used REALISM software when imaging an extremity on a patient, he was very impressed by the clarity and sharpness of the images.

“In the wrist where there are many small bones, I immediately noticed the fine details and sharper images allowing me to see finite details of each bone,” Lemke explains. “The images were so crisp the bones just popped and the edges and trabeculae of every bone were very clear.”

In fact, the radiologist reading this study also commented to Lemke that the images were extremely crisp and clear with sharp details throughout the wrist.

“We have also noticed that REALISM image processing enables us to visualize soft tissue without changing the window leveling, saving us time on each exam” Lemke adds. He adds that it is most often used in exams of the neck to visualize bones and soft tissues, in the spine including lateral C-spines, chest X-rays and orthopedic extremity imaging.

“With REALISM software and AeroDR wireless flat panel detectors, we can now see things in X-ray that we couldn’t see before.”

REALISM image processing is easy to implement and use. A newly trained technologist who previously only used CR was able to quickly learn how to use and manipulate the new AeroDR wireless flat panel detectors with REALISM software after just one demonstration.

Lemke also tracks repeat exposures. He had previously noticed that technologists were performing repeat exposures because they were not optimizing exposure levels. In the first month after installing AeroDR wireless flat panel detectors, Lemke worked with this staff to ensure a higher attention to detail with the new DR system; as a result, repeat exposures have dropped by as much as 20%.*

REALISM software also enhances the sharpness of high frequency microstructures, such as bone trabeculae, for improved visibility.

* The results in this case study are specific to Cuero Regional Hospital and are not intended as predictive for other users of REALISM software.

Lemke has seen first-hand improved department efficiency and workflow due to the increased image clarity and sharpness from REALISM software.



“With the previous system and software, I would make image adjustments prior to sending the images to PACS,” Lemke says. “Now, with REALISM image processing, I rarely touch them. I almost always get exactly what I want with the new system, only occasionally needing to make an adjustment.”

The decrease in image manipulation has led to higher technologist efficiency and faster patient throughput. As an example, Lemke can turn around chest X-ray studies in seconds.

“Just recently, I was able to complete chest X-rays on three patients in eight minutes. That’s getting them in, capturing the exam and letting them go,” Lemke says.

Radiologist productivity and diagnostic confidence have also increased, which has helped increase accuracy of the radiologists’ reports. One radiologist has shared with Lemke that he can read through X-rays acquired with AeroDR wireless flat panel detectors and processed with REALISM software faster—without being concerned that he has missed anything.

As an example, Lemke cites a specific case of a patient with a hairline malleolar fracture of the ankle. The fracture is generally difficult to see, but when the images were processed with REALISM software it was prominent on the image and easy to visualize.

“With REALISM and AeroDR, we can now see things in X-ray that we couldn’t see before,” Lemke says.