



CASE STUDY: *iDR-L*

Evolution of a Technology: *Long-bone Imaging*

When Leo Reina, president and CEO of **Reina Imaging** (Chicago, Illinois), a radiography repair and manufacturing company, first entered the business 32 years ago, long-bone imaging was still largely the purview of chiropractors and orthopedists. ***“Chiropractors would do it looking for curvature of the spine,” he recalls, “and as prosthetics became more common, more orthopedists started doing it for either the full spine or hip-to-ankle imaging.”*** As time went on, the technology was widely accepted as a means of diagnosing scoliosis, and it soon became part of radiologists’ armamentarium as well. “The current issue is the transition from film to digital operation,” Reina says. “We’re working to resolve imaging problems specific to those long studies, which require specialized equipment and training.” While radiography in general has progressed naturally from analog imaging to CR to DR, Reina notes that long-bone imaging presents special challenges. “In long-bone imaging, the anatomy tends to be thick at one point and thin at another, so taking one single image to encompass all anatomy regions is a problem in terms of continuity,” Reina says, “and DR has not historically had any receptors large enough to encompass the entire anatomy.”

Innovative Solutions

For these reasons, iCRco (Torrance, California) developed its iDR Long Bone, a long-bone radiography platform that utilizes a 14” by 51” detector plate and eliminates the use of a cassette; the company has also developed a 17” by 51” version of the product. Reina explains, ***“It’s a system that uses phosphor plate technology in the detector, which allows for a higher resolution than DR anyway—and there are no cassettes involved. From a user’s standpoint, it’s the same workflow as DR: I position the patient and do a single exposure.”***

“This system works the same way the technologist did before, so it’s not difficult to incorporate into workflow, but it’s a single exposure,” Reina says. “From a user standpoint and an image-resolution standpoint, you might as well be using DR, but this is a lower-expense system that facilitates the ethical thing to do for the patient, in terms of radiation exposure.” Because the system takes a single image, users can leverage compensation filters to balance out the exposure between thicker and thinner areas of anatomy, Reina says. “It’s clear plastic with a leaded glass in between, so that when taking a single exposure, I can use the filter to block radiation from the thinner part of the body, creating a compensating effect,” he says. “That way, radiation from even a single exposure is minimized. The most important factors in optimizing this kind of imaging are the proper positioning of the x-ray tube in conjunction with good exposure techniques.”



The only adjustable direct digital radiography solution that offers a seamless 17” x 51” phosphor screen detector capable of full-spine, regional and zone imaging.

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