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## Portable DR in the NICU: Safety for the most precious of patients

—[Evan Godt](#)

Radiation dose is one of the top concerns in imaging today, and since younger patients are the most vulnerable, reducing dose in pediatric imaging is especially important. Professional societies, including the Society for Pediatric Radiology, the American College of Radiology and others, have stressed the principle of ALARA for dose—As Low As Reasonably Achievable—and thrown their support behind initiatives like the Image Gently campaign.

Providers have heeded the call, including the Children's Hospital at OU Medical Center in Oklahoma City, where dose reduction has been a major focus. Troy Nelson, radiology director at Children's Hospital says it was a deciding factor in the move from CR to DR with their portable radiography units.

After checking various vendors, the hospital eventually went with the FDR Go from FUJIFILM Medical Systems U.S.A., Inc., picking up the first of two units. "We were pleasantly surprised that our biggest [dose] reduction was from FDR Go," says Nelson, who notes the hospital is seeing dose cut approximately 50 percent in the

move away from CR to FUJIFILM's portable DR system.

Another major differentiator for Children's Hospital in the search for a portable DR vendor was Fujifilm's ability to offer the wireless FDR D-EVO 24x30cm detector. Detectors of that size were unique to Fujifilm at the time, and a high priority for Nelson and his colleagues since they could fit into built-in trays underneath the isolettes in the NICU.

The small patients in the NICU are typically unstable, underweight and require constant monitoring. Stephen Corley, dayshift supervisor, says the 24x30cm detectors can be turned in different orientations and take out the guesswork involved with some other detectors—meaning fewer repeat scans and less dose.

"If you can only put cassette in one direction, you would have to move the patient to accommodate that direction. With the 24x30, you can put it in either direction so there's less handling or moving of the patient," says Corley. "If the baby is turned sideways in the isolette where they're putting down a new [endotra-

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cheal tube], you can position the detector that way or turn it long ways if that's how they are positioned.”

Previously, if a patient wasn't positioned correctly, staff would have to open the isolette to move the patient. “Nothing good comes from getting in there, only potential problems happen,” says Nelson. Any kind of movement can put a neonatal patient at stress, and opening any isolette always carries a risk of exposing patients to infection or accidentally tugging a line or IV. “You always try to do everything possible to avoid those things, but not having to get in and disturb the baby at all automatically eliminates those risks.”

Patient safety is also elevated in the move to DR from the ability to instantly see scans on the FDR Go unit as they are acquired, explains Corley. PICC line teams, for example, can view images while remaining sterile in case a line needs to be adjusted, rather than the old workflow in which they'd break scrubs and seek out a PACS station to determine whether adjustments are necessary. The FDR Go protects patients by making sure the image is clear on the first try and greatly decreases the amount of time involved with bedside procedures.

## **Updated maneuverability, friendlier look**

Staff at Children's Hospital appreciate the maneuverability of the FDR Go units, especially since the two units they purchased have become workhorses used all over the facility, which has a capacity of 220 beds for children and another 120 in the Women's and Newborn Center.

“Handles like a racecar,” says Corley. While the smaller, easier-to-handle FDR Go makes life easier for the techs driving them all over the hospital, here again is another patient safety benefit—a slimmed down portable is less like to bump an patient's bed.

Moving away from bigger, bulkier units also has put children at ease. Nelson says previous portables could put panic on kids' faces as soon as they were wheeled into the room. But that has changed now, thanks to cartoon decorations wrapped around the FDR Go.

“It make such a difference when wheeling in the machine,” says Nelson. The quiet, smaller and more playful looking scanners are now more of a colorful curiosity, putting smiles on patients' faces instead of fear.

Calmer patients mean quicker scans and a lower chance of needing to retake an image. Nelson notes that the more kid-friendly units also put another group at ease: parents.

“It almost helps ease the parents as much as it does the children,” says Nelson. “And naturally because children are feeding off the vibes from their parents, when they are more at ease it ultimately helps the kids be at ease.”