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St. Joseph's/Candler takes measures to bolster dose minimizing efforts with dose tracking technology

—CLAUDETTE LEW

Amidst increasing concern from patients, as well as increased publicity about the effects of radiation exposure, hospital systems like St. Joseph's/Candler, serving Savannah and the four surrounding counties of Chatham, Effingham, Bryan and Liberty, in Georgia, are proactively developing system-wide initiatives that reflect their commitment to reduce patients' radiation exposure.

There is a tremendous drive in the healthcare industry to understand how much radiation is delivered by various devices, and to track patients' accumulated radiation exposure. Because facilities rarely operate imaging systems from only a single vendor, these data are likely stored on a number of disparate systems and disconnected databases. Having to wait while someone collects all the data to perform a retrospective analysis on the dosages is not effective when looking to take proactive measures to reduce dose.

Fortunately, the surge in the use of data analytics in healthcare, together with the need to monitor and track radiation dose, has spawned the creation of sophisticated technology such as Sectra's Dose Track™ that will not only collect the data from disparate systems, but also provide detailed analysis.

Jeff Zehel, MBA, CRA, RT(R), director of imaging services at St. Joseph's/Candler, provides details about the facilities' dose reduction initiative and how Dose Track serves to bolster their commitment.

Data: The new king

St. Joseph's/Candler recently invested in Sectra's Dose Track technology to collect and render data on the hospitals' radiation emitting devices.

"As the hospital increases its awareness and consolidated efforts to reduce dose, the data provided by our dose monitoring system help us to see whether our exams are falling within acceptable ranges," Zehel explains. "We felt that a tracking system such as Dose Track will support our commitment to reducing exposure and increasing the safety of our patients, while we continue to provide them quality healthcare. The data we're seeing so far serve to validate when we're doing well and alerts us when they reflect a potential problem."

The hospital is in the initial stages of setting up Dose Track throughout the two facilities and currently has monitoring in place for six of its CT systems. According to Zehel, they are making great progress and have plans to include other imaging modalities once the CT protocols are finalized.

"Right now we're working with our physicists, our technologists, and our champion radiologists to decide on the parameters for different exams. Once we set that baseline, we can overlay the Dose Track data from our scanners and see where they fall. We anticipate having to make some calibration adjustments to the machines so they are all in alignment with the parameters we set. Once we do that," says Zehel, "we'll be able to graphically demonstrate the reporting, which will allow us to isolate and investigate instances where dose may have been higher than our set standard."

Preliminary monitoring has shown some instances of higher dose levels for some exams. "We've seen some blips," Zehel reports, "and we've been able to go back and track that. For example, it may have been a patient who needed a biopsy and they were under the machine a little longer. There's a great

function with the system that allows us to see something like that displayed graphically."

Commitment runs deep

"As healthcare providers, our priority is to provide quality healthcare to our patients and we're committed to dose reduction at St. Joseph's/Candler. But it's important to make the distinction that our investment in a sophisticated tracking tool serves not as our commitment, but in support of it. Our commitment starts with our people. St. Joseph's/Candler physicians and staff are championing the effort, and creating the processes and structure to support our initiatives—outside of purchasing the technology that drives it," explains Zehel.

He further explains that they've formed a multidisciplinary committee that is dedicated to efforts in promoting patient safety. The committee will be reporting its progress to the hospital's quality committee.

"I can tell you that all the members of the patient safety committee, as well as physicians throughout the organization are all interested in reducing dose to the patient. Like a lot of other facilities, we've started tracking with our CT systems, but we're hearing from cardiology and angiography, saying 'Me next! Me next!' There's absolutely no questioning the commitment of our physicians and staff to our dose reduction efforts."

Measuring progress

Without definitive industry-endorsed guidelines with respect to acceptable dose levels by procedure, the picture of progress is equally lacking in definition. The American College of Radiology (ACR), however, did introduce a tool that is available for both input as well as comparison. The ACR's dose index registry is a database where radiology departments can not only input their own CT data, but also compare their data to the regional and national averages. Of course, the truest measure of progress is to compare yourself to yourself. By taking a snapshot of today's data, Saint Joseph's/Candler can compare them with the tracking data at three and six months from now, and have the ability to document how changes to protocols and practices have effectively led to a reduction in dose.

There are some specialties whose use of radiation is substantially higher than others and current dose rates may stand out as being higher than most when the data are retrieved and analyzed. Some recent attention has been drawn to cardiology for that reason, in a position paper published by The European Society of Cardiology in January 2014. According to Eugenio Picano, MD, of The Institute of Clinical Physiology CNR, in Pisa, Italy, cardiology accounts for 40 percent of patient radiation exposure. The paper called for a higher awareness of radiation doses in cardiac imaging tests.

"We're specifically interested in using the tracking data to inform our departments and individual physicians of their own progress. The sophistication of the monitoring system allows us to track by both. We are able to present a report at a cardiology department meeting, for example, so that our cardiologists can evaluate their department progress month over month, as well as that of each cardiologist, as compared to his or her peers," explains Zehel.

The committee working on the data collection and tracking program is planning extensive physician and staff education throughout the hospitals, knowing full well it takes an integrated team, collaborating together to achieve the best outcomes.

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