

With DoseMonitor® now live, Continuum looks toward a future that underscores its commitment to patient safety

In recent years, ionizing radiation has emerged as a growing concern among imaging centers and radiology departments across the country. Fortunately, a system that accurately measures exposure on a patient, study or modality basis, both enhancing patient safety and ensuring hospital regulatory compliance, is gaining broad acceptance: DoseMonitor®, developed by PACSHealth LLC's innovative PHS Technologies Group.

Among the largest and most successful healthcare networks to implement DoseMonitor is New York-based Continuum Health Partners, operators of Beth Israel Medical Center, Roosevelt Hospital, St. Luke's Hospital and the New York Eye and Ear Infirmary. Continuum, with a combined capacity of 2,180 beds across the four facilities, completed implementation of DoseMonitor on its 20 computed tomography (CT) scanners on Feb. 19, 2013, and anticipates going live on its other radiation-emitting imaging modalities later this year.

"There are very few vendors who do this type of monitoring," said Marc Katz, corporate director of radiology for Continuum Health Partners. "What sold us on PACSHealth was their software, their personnel, their business model and philosophy, and the potential for expandability from CT to interventional radiology, mammography and digital radiography later this year."

DoseMonitor, introduced by Scottsdale, AZ-based PACSHealth in 2010 as the most accurate means yet of monitoring radiation dose during medical imaging exams, has certainly raised eyebrows. The product offers an effective means of monitoring each patient's dose history, enabling healthcare professionals to make the wisest and safest patient care decisions and hospitals to ensure compliance with increasingly stringent regulatory requirements.

Implementation spans the enterprise

With assistance from PACSHealth, Continuum began implementing DoseMonitor across the enterprise in September 2012 under the close scrutiny of key project leadership, including hospital management, physicians, a physicist, technologists, IT personnel and other staff; chief among them were Katz, Vincent Monte, administrator of radiology for Beth Israel's Brooklyn Division, and Dr. Michael M. Abiri, chairman of the Radiology Department for Continuum. With more than 25,000 original, or pre-live, studies already in its database, Continuum has turned a corner in ensuring patient safety.

"PACSHealth and their organization have been extremely helpful throughout the implementation process" Katz said. "I have the highest regard for them and for how they've gone about assisting us."

Established in 1997, Continuum provides a broad-based and fully integrated health services network that serves the entire New York City metropolitan area. Its hospitals deliver inpatient care through seven facilities in Manhattan and Brooklyn while also providing outpatient care in private practice settings and ambulatory centers. On the radiology side, dozens of physicians and more than 250 technologists complete an estimated 800,000 exams annually across all modalities. A high percentage of those are CT studies.

Software, standards, processes prove convincing

According to Katz, key selling points were the DoseMonitor software, its dashboards, and the standards and processes established for recording and monitoring dose. During the investigatory stage Continuum looked at DoseMonitor's installed base, spoke with users, compared the application with another product on the market, and considered price points. After the evaluation team decided the PACSHealth product was the best available choice, the companies entered into a multi-year agreement.

"This is a relatively new product, and I suspect that over time there will be a regulation requiring everyone to install something like this," Katz said.

www.dosemonitor.com | 877-299-6587
info@dosemonitor.com | +1-602-635-6174

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Historical exposure monitoring a plus

That perspective makes sense. DoseMonitor provides near-time visibility with multi-level alerts to potential excessive radiation dose before additional exposure occurs.

DoseMonitor allows healthcare facilities to compare, aggregate and interpret data from ionizing radiation sources to accurately depict cumulative exposure. In essence, by using dose values from diagnostic imaging equipment, devices and examination procedures that no longer meet dose specifications can be identified.

While implementation has gone smoothly for Continuum, there have been hurdles to clear. Connectivity issues involving one CT manufacturer resulted in an incompatibility that PACSHealth had to overcome, however the company's technical staff moved quickly to resolve the issue.

"Implementation has gone well," Monte said. "We put together a great team, we had the support of PACSHealth, and we built a structure that allowed us to navigate the implementation of this entire project without any major obstacles. Considering the size and diversity of our enterprise, to put this together and be confident with what we've accomplished speaks volumes."

Focus turns to results

With DoseMonitor now live at Continuum, staff can focus more fully on its myriad capabilities as they image patients and monitor dose efficiency. While the primary feature is the ability to monitor dose per patient, study and modality, the most attractive feature from a managerial standpoint is the capability to "drill down" to different levels and report on specific data, including hospital sites and specific body parts, Monte said. What was once a labor-intensive process has been made significantly easier by the application, which Monte said also is extremely user friendly.

"DoseMonitor allows technologists to zero in solely on their hospital site," he said. "They don't need to do any unnecessary searching for procedures—they click on a filter and can easily navigate through high concentrations of patient data."

He added, "Those two features have proved to be the most attractive, aside from the primary goals: to ensure the lowest possible dose to our patients and make sure we can provide them with the highest level of safety during a procedure."

Katz went a step further, noting that the product monitors exposure cumulatively over multiple procedures to make sure that patients don't historically receive an unacceptable amount of radiation based upon American College of Radiology recommendations and Continuum's own high standards.

Going forward, the biggest challenge will be seamlessly integrating DoseMonitor into the workflow of the four facilities. With the system now live, technical staff are excited about the product's potential to ensure patient safety while increasing staff efficiency.

"Our technical staff has really embraced this project," Katz said. "I personally believe it's empowering them, because they're becoming more involved in the actual patient care plan. They're able to make decisions that can affect overall care."

Peace of mind an added bonus

While return on investment (ROI) will be difficult to measure, one benefit that Monte anticipates is added peace of mind. The primary purpose in implementing DoseMonitor was to ensure patient safety, and with DoseMonitor in place he is confident that has been achieved. As word of DoseMonitor's capabilities spreads throughout the community, Continuum may be able to capture more patients—bolstering ROI.

"During the testing phase we were able to identify CT units that needed intervention from service engineers or application specialists," he said. "We would hope to expand that same concept to all of our modalities over the next year. DoseMonitor will provide a means for us to keep an eye on our imaging units and how they're functioning."

In time, Continuum hopes to begin sharing exposure data with patients as they undergo multiple imaging exams and move from physician to physician and facility to facility. It's all part of Continuum's goal of ensuring safety and providing patients with the best possible care.

"When used to its maximum potential, this product can provide a wealth of information that institutions can utilize to monitor patient dosage, evaluate equipment performance and generate reports," Monte said. "The application is easy to navigate and integrates well into a department's workflow, I would feel very comfortable recommending it to colleagues."