



Using Data to Scan Smarter at a Lower Dose

For years, technologists at Kaiser Permanente's Hospital in Hawaii had been collecting and calculating data about radiation dose from exams and sharing it with radiologists for inclusion in reports.

But the clinical team wanted to go beyond just tracking the amount of dose to begin benchmarking that data between facilities in the region and against other divisions in the Kaiser Permanente network. An ecosystem of data surrounds the medical devices involved during or after an imaging procedure. By automating the collection of this data and using analytics to draw insights, they sought to allow their organizations to better manage clinical quality and safety.

The organization began by deploying GE Healthcare's DoseWatch™ software that retrieves, tracks and reports the radiation dose administered to patients during medical exams and automatically organizes the data for hospital leaders so they can easily and effectively monitor dose provision in their institution. The system collects data in multiple ways—by imaging device, by the individual operator or by protocol—so it can compare the dose being administered from one exam to another from the past.

“Such quality improvements initiatives require a holistic view of radiation exposure across multi-facility, multi-modality and multi-vendor imaging environments,” said Michelle Reich, industry analyst with Frost & Sullivan and author of the firm's new Best Practices Research Report for dose management solutions.

After 30 days of data was collected, the GE team returned to review the data, discuss insights and train the staff to use the tool effectively. Critical next steps included setting dose targets for various exams and benchmarking with others in the Kaiser Permanente network. This guidance from GE was critical for Kaiser Permanente to make meaningful change that would help reduce dose.

Salem Health in Oregon is striving to build a culture around managing dose for radiology and cardiology procedures. They are leveraging GE Healthcare's dose management portfolio of solutions to build and implement a strategy focused first on dose monitoring and analytics, then they plan to expand into a more comprehensive dose excellence program.

“At Salem Health, our top priority is the patient. State-of-the-art equipment and low dose practices are already in place, but we wanted to take our dose management even further,” said Anna Mench, PhD, Diagnostic Imaging Physicist with Salem Health.



The provider is working to reduce its CT doses by 10-20% across all scanners and in all protocols, where feasible. DoseWatch pulls data on previous averages for the protocol and, after adjusting scanner acquisition techniques and consulting radiologists on preservation of image quality, verifies that the average has decreased by the desired amount.

Affidea, the largest independent provider of advanced diagnostic imaging services in Europe, believes a cornerstone to becoming the biggest global provider of diagnostic imaging and cancer care is introducing practices that are standardized, unified and optimized. This isn't easy given the number of geographies it operates in and the amount of data it accrues.

“As far as we know, the Affidea dose excellence program is the largest dose optimization program of its kind,” said Rowland Illing, Chief Medical Officer with Affidea. The foundation of this program was its initial cooperation with GE Healthcare in 2012 on the DoseWatch analytics platform. Today, Affidea's dose excellence program centralizes and analyses data from 65,000 CT scans each month.

“GE Healthcare had the foresight of making the platform vendor neutral, meaning that we are able to compare dose data between different models and different manufacturers of CT systems using different dose reduction algorithms,” said Rowland.

For more information on DoseWatch and to download the Dose Management Whitepaper, please visit www.gehealthcare.com/dosewhitepaper. The Frost & Sullivan report is available at www.gehealthcare.com/frostsullivan. ■