

Getting Hybrid Scanners to Run “Like a Swiss Watch”

Leveraging PET/CT and SPECT/CT scanners for both molecular imaging and dedicated CT saves space, time and budget at the Hirslanden Klinik St. Anna in the Swiss Alps. But it is the image quality and range of sophisticated applications they deliver that distinguish this 200-bed hospital.

By Jonathan Batchelor

The idea to combine nuclear imaging and radiology at the 200-bed hospital in Lucerne, Switzerland, was rooted in necessity. The previous two gamma cameras and 16-slice CT were far from state-of-the-art, and Hirslanden Klinik St. Anna was feeling the pressure. With large hospitals nearby offering molecular imaging, including PET/CT, the smaller hospital had to keep up or risk irrelevance.

In 2011, newly arrived Udo Schirp, MD, a specialist in radiology and nuclear medicine, came up with a bold plan to perform nuclear medicine and CT scans on the same hybrid scanners.

“We are a small private hospital; we cannot afford standalone machines,” Schirp said. “For CT and nuclear medicine scans, our goal was to have all hybrids in order to optimize our

Biograph mCT Flow Edge, with a built-in 128-slice CT, is the principal tool for conducting CT scans at Hirslanden Klinik St. Anna.



flexibility and speed, as well as to offer the best imaging options when combined with our MRIs.”

Schirp’s plan was to use a Siemens Biograph mCT Flow™* Edge, with its built-in 128-slice CT, to handle the scheduled CT scans and the additional 24/7 emergency attendance, while also performing its PET scans each day. Meanwhile, two Siemens Symbia™ T16 SPECT/CTs would conduct orthopedic, oncologic and cardiac nuclear medicine scans, while handling overflow CT cases. In the end, the aging gamma cameras would be decommissioned, as would the dedicated 16-slice CT.

The plan began to take shape in June 2012, when the first Siemens Symbia T16 arrived. Initially, its primary task was to take over the orthopedic and oncologic scans of the dual-head gamma camera that it replaced. Next, an identical Symbia T16 arrived in February 2013 for cardiac nuclear medicine scans, replacing the triple-head gamma camera.

The two SPECT/CTs handled the load of the previously installed two gamma cameras. Because the scanners were identically equipped, patients regardless of their exam could be examined on either machine. Wait times decreased and workflow improved. CT patients soon were also scheduled into time slots created by the increased efficiency.

Soon the 16-slice Siemens Sensation was removed. During the installation of the Biograph mCT Flow Edge, the improved slot management from the two Symbia T16s allowed the hospital to maintain all of its patients for CT and nuclear medicine scans as well as uphold its 24/7 emergency setting. Only on occasion were department hours extended.

More CT than PET

Siemens’ highest performance PET/CT, featuring a 128-slice CT, soon became the principal tool for conducting CT. Meanwhile, Biograph mCT Flow Edge’s extended field of view for positron imaging and Time-of-Flight imaging made short work of PET/CT scans.

“The speed of Biograph mCT Flow Edge and its processing software allows us

to do more whole-body PET/CT scans, when we need to,” Schirp said. “We can change the counts for different body segments, depending on the indication. Without this speed and flexibility, we couldn’t make PET work in our setting.”

Demonstrating Biograph mCT Flow Edge’s flexibility, Schirp illustrated an instance when the facilities automatic syringe system delivered an amount less than the indicated dose of a PET radiopharmaceutical to a patient. Schirp and his team recognized the issue immediately, he said, but knowing how easily the Biograph mCT Flow Edge can adapt, they sim-

helpful for interventions, particularly abdominal, bone and lung procedures.”

As a next step to increase its flexibility, the Hirslanden Klinik is also planning to move its scans of the selective internal radiation therapy (SIRT) from the SPECT/CTs to the Biograph mCT Flow Edge system.

The hospital prides itself on being efficient. It has to be. Competing hospitals draw patients with large, publicly funded departments. The privately run facility matches a broad clinical range and the image quality of its competitors, while adding flexibility and speed.

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Udo Schirp, MD

Radiology and Nuclear Medicine Specialist, Hirslanden Klinik St. Anna, Lucerne, Switzerland

ply altered the exam protocol to optimize the lower injected dose and deliver the same high-quality images.

“We slowed the table and lengthened the acquisition time to compensate for the lower dose,” he explained. “We got a diagnostic-level exam and the patient did not have to return for a retake.”

To compensate for the long scan, some CT patients were shifted to the Symbia T16s. “No one had to wait for their appointments and we didn’t have to reschedule any patients,” Schirp said.

PET/CT Provides Edge

The built-in 128-slice Edge CT is used for interventional, as well as diagnostic procedures. The system integrates the 128-slice CT into the same gantry as the four-ring PET detector.

“The single gantry on Biograph mCT Flow Edge makes our interventional procedures much easier and faster,” Schirp noted. “The 3D-Intervention suite is a good tool; we find it very

“To ensure the best service to our patients, it is very important that our imaging equipment runs solidly—like a Swiss watch,” he chuckled. “You just put it on and do your work. Biograph mCT Flow Edge and the two Symbia systems—they run like a Swiss watch.” ■

* Biograph mCT Flow and Biograph mCT Flow Edge are not commercially available in all countries. Due to regulatory reasons their future availability cannot be guaranteed. Please contact your local Siemens organization for further details.

The statements by Siemens customers described herein are based on results that were achieved in the customer’s unique setting. Since there is no “typical” hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.