

SPECT•CT in Australia: Meeting the Competition Head On

At Ballarat Health System in Ballarat, Victoria, Australia, pairing SPECT and CT was essential when establishing a new, state-of-the-art nuclear medicine department. Their objectives focused on excellent image quality and clinical outcomes, efficient workflow, growth in their referral base and expansion into multispecialty imaging. And that is just the beginning of what they accomplished when they installed a Siemens Symbia T16 SPECT•CT system.

By Beth Walsh

Ballarat, Victoria, is nestled between Australia's second-largest city, Melbourne, and the Grampians Region, an area known for its diverse natural surroundings and wineries. Ballarat Health System (BHS) serves the region's 224,000 people, which is 4.4 percent of Victoria's population, covering more than 48,000 square kilometers/18,500 square miles. The organization, with about 3,000 employees, is the largest health service in the Grampians region. In September 2010, BHS installed a Symbia™ T16 SPECT•CT in a spacious, purpose-built facility designed specifically for the high demands of both ambulant and bed-bound in-patients. The nuclear medicine area is located within its busy radiology department, which performs about 95,000 examinations per year, and forms part of a high-end, comprehensive imaging service. Symbia T16 "provided BHS with access to a state-of-the-art nuclear medicine service, as well as additional access to a third, high-quality diagnostic CT resource," says Greg Wilton, BHS' chief nuclear medicine technologist.

Getting Started

Driven by a clinical and financial need to provide BHS with high-end, self-sufficient in-house nuclear medicine service, the new department started with a mix of

both CT and nuclear medicine examinations. Once applications training was complete and sufficient familiarity with the system had been attained, the service was promoted to external referrers through the distribution of hard-copy flyers, advertisements in newspapers and extensive television coverage. Despite its relatively modest beginnings, the department now regularly exceeds 15 patient examinations a day. In addition to this, access to Symbia's CT capability has proven advantageous during periods of high clinical demand for CT scanning, typically driven by the hospital's emergency department. In particular, "multi-trauma" patients from regional high-speed automobile accidents are direct beneficiaries.

Flexibility for the Workload

The Symbia's workload mix is composed largely of cardiac studies and bone scans for oncology and orthopedic patients, as well as renal, lung and thyroid scans. "Because we are a regional facility, we also undertake a relatively high percentage of pediatric work," says Wilton. While BHS now has two full-time equivalent technologists, plus a trainee in nuclear medicine, the clinical acceptance of this technology has led to an expanding patient waiting list. A recent upgrade to the scanner,

IQ•SPECT, has assisted in helping to expedite cardiac exams, Wilton says. The upgrade includes a new collimator for the camera and software. The combination of getting more photons from the heart during exams and the ability to make better use of the photons results in reduced scanning time and reduced radiation dose, Wilton notes. Scanning times have dropped to just five minutes from 15 minutes, while retaining image quality, which ensures quick and accurate acquisitions. The reduced, ultra-fast cardiac examination time brings benefits for patients by increasing patient comfort, producing high-quality images and reducing the likelihood of patient motion. The shorter scan time also permits a greater throughput of patients overall. Patient set-up from the technologist point of view has been relatively simple and easy to learn with few additional steps to the standard myocardial examination, according to Wilton. Processing the resultant images is the same as Siemens' myocardial processing technique. IQ•SPECT also has the potential to reduce the amount of radiopharmaceutical dose administered to patients, thereby reducing radiopharmaceutical cost, as well as patient radiation dose. Wilton says that reporting

nuclear medicine physicians have been pleasantly surprised at the image quality produced by the addition of the IQ•SPECT system in light of the significant reduction in imaging time. As part of the introduction of IQ•SPECT, a number of patients were imaged both with IQ•SPECT and the traditional method, which allowed clinicians to be confident that the images they were receiving were the same—just in far less time. Symbia T16 provides patients with a degree of flexibility not available on other SPECT cameras. For example, oncology patients who may require a bone scan as well as a chest, abdomen and pelvis CT as part of their routine workup can have both procedures undertaken at the same time. “We are able to offer those patients the two procedures on the same day, which is not necessarily done elsewhere,” Wilton says. This is particularly important for patients who may have had to travel from remote regional areas to Ballarat. It also means that, in many cases, only a single injection site is required.

Savings, Revenue and Patient Satisfaction

The installation of Symbia T16 at Ballarat Health System has led not only to the extinguishment of payments by BHS to third-party providers for the provision of nuclear medicine, but also has allowed the hospital to generate a healthy revenue stream in its own right. “It is an extremely cost-effective service; the unit itself is easy to use and offers excellent images,” Wilton explains. In addition to these benefits, BHS now offers services such as whole-body scans that were previously unavailable. In-patients also are benefiting as they no longer have to leave the hospital to access nuclear medicine imaging.

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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.



Above: Ballarat Health System uses Symbia T16 SPECT•CT for a wide range of patient cases. “It is an extremely cost-effective service; the unit itself is easy to use and offers excellent images,” says Greg Wilton, BHS’ chief nuclear medicine technologist.

Below: Lung perfusion image using Symbia T Series. Image courtesy of Siemens

