



The Gamma Knife is now available to Australian patients; top right; Synergy linear accelerator; bottom right: Michael Grace; below: Scott Piggott.



# Macquarie University Hospital has Australia's first Gamma Knife

**MORE THAN 500,000 CANCER PATIENTS HAVE UNDERGONE GAMMA KNIFE SURGERY – NOW THIS ADVANCED TOOL IS AVAILABLE HERE. *SPECTRUM REPORT***

As the cancer treatment centre at the new Macquarie University Hospital (MUH) in North Ryde, Sydney, approaches six months in operation, practice manager and chief radiation therapist, Scott Piggott, says that the number of patients is increasing month on month. Australia's first Gamma Knife is proving to be highly successful, as are the first of two Elekta Synergy linear accelerators and a Siemens Sensation Open CT.

Genesis Cancer Care and Radiation Oncology Associates general manager Michael Davis said: "We are pleased with the growing demand for services at the hospital. In line with our expectations, we anticipate the first Synergy will be approaching capacity over the coming months. As the wider hospital network further expands over the next 12 months, the second machine will come on line."

After 15 years as a radiation therapist Scott Piggott joined Siemens and was working in a product development role in Germany when he was invited to lead the



team tasked with developing a new cancer care facility at MUH.

The invitation came at the right time, he says. Wanting to return to Australia, the challenge of planning, establishing and then managing a brand new facility was "too good to turn down."

A floor plan and outline equipment list were already in place when the Genesis team assembled last February, but a CT scanner had not been included in the Macquarie list at that point and one of his first tasks was to identify the most suitable machine for the centre's anticipated case mix.

"We believed that a CT scanner would be

very important to the centre's capabilities," he told *Spectrum*. "Bore size is a critical factor... for our type of work bigger is better."

"That, plus technical features led to our choosing a Siemens Somatom Sensation Open large bore CT."

Genesis moved on site in April to commence fit-out and organise ancillary equipment purchases. By early June all of the equipment had been installed and tested, a group led by Dr Yang Wang from the Genesis Physics Department undertaking the commissioning.

"All in all, it was a smooth build-up," Scott Piggott said. "We couldn't have done it in the time without the teams from Macquarie University and Genesis Physics Department, and the cooperation of Elekta and Siemens."

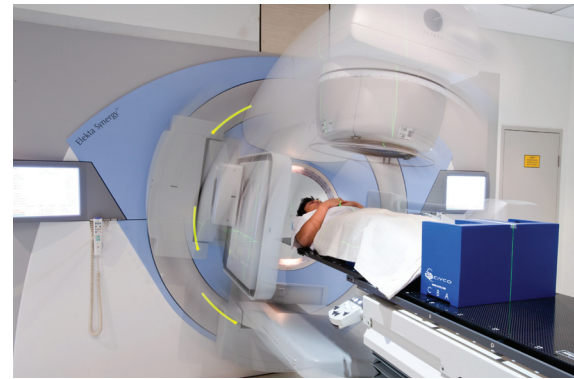
The facility's equipment list includes a Gamma Knife Perfexion with ancillary Gamma Plan 9 planning system; two Elekta Synergy linear accelerators with VMAT and IGRT capability; a Siemens Sensation Open wide bore CT; CMS Xio<sup>®</sup> and Monaco<sup>®</sup> 3D

planning systems; and Mosaic® oncology patient management system.

Costing more than \$10 million, this represents a substantial investment by Genesis, in conjunction with MUH, in improving the quality and access to cancer treatment for NSW residents.

In keeping with the hospital's superb overall standard of interior design and fit-out, a great deal of thought went into planning the cancer care centre, to offer patients a serene environment while undergoing treatment. Walls and floor coverings match the equipments' cool colours throughout. In the CT area, instead of looking up at a blank ceiling, there's what seems to be a large skylight but is actually a backlit transparency image of trees in bloom and fluffy clouds set against a blue sky.

In preparation for the Gamma Knife system, Michael Grace, now principal physicist on the Gamma Knife, Dr Michael Izzard and Scott Piggott from Genesis, and Assoc Prof Angela Hong and Dr John Fuller from Macquarie, travelled



Systems valued at over \$10 million have been installed at MUH

## Elekta Gamma Knife Perfexion

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With Leksell Gamma Knife Perfexion, the multiple helmets have been replaced with a single robotic system with three collimator sizes. Because the collimator size automatically changes, according to the treatment plan, treatment times are radically reduced.

### Improved workflow speeds radiosurgery

The system comes complete with GammaPlan® PFX, the dedicated treatment planning system designed to take full advantage of the features and intelligence incorporated in the system. Composite

shots enable sculpting the dose distribution, which is then delivered with the unmatched accuracy associated with Gamma Knife surgery.

### Radiation protection

Every feature reflects patient and staff safety and comfort. The system provides radiation shielding that is up to 100 times better than alternative technologies. Room radiation levels are low enough to allow for a window into the treatment room and the system can be accommodated within a normal-sized room.

The collimator system consists of 192 cobalt 60 sources, divided into 8 sectors that can be individually positioned to any of 4 states: 4 mm, 8 mm, 16 mm or off. During treatment, these sources are positioned via the sector mechanism to generate the desired radiation beam, and enable treatment of highly complex structures.

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Siemens Sensation Open wide bore CT; bottom Synergy linear accelerator

to Pittsburgh for training.

The first Gamma Knife patients were treated in August and in the months since, in conjunction with the hospital and Macquarie Neurosurgery, the Genesis team has treated many lesions including metastasis, acoustic neuromas, meningiomas, glial tumours, a trigeminal neuralgia and a trigeminal neuroma.

The trigeminal neuralgia patient has



been of the more noteworthy cases treated thus far on the Gamma Knife. The patient had been using analgesic medication for a number of years without much pain relief. A single fraction of 80 Gy delivered over a 25 minute timeframe was administered. No side effects were experienced and the patient had an overnight stay and walked out of the hospital the following day. Five weeks post treatment, the medication had been reduced to minimal levels, pain levels had subsided and the patient has been able to attend family functions for the first time in a number of years.

Genesis is expanding at Macquarie University Hospital. Currently there are three radiation oncologists, supported by a team of radiation therapists and physicists either employed directly at the hospital or across the Genesis Cancer Care / Radiation Oncology Associates network. Scott Piggott invites suitably qualified radiation therapists and physicists who would like to express an interest in working at Macquarie or would like more information to call him on (02) 9812 3226 to talk about job opportunities.

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Current registration with the Medical Technologist's Board of New Zealand in the scope of Radiation therapy is essential and these positions are to commence as soon as possible.

**Please see [www.christchurchnz.com](http://www.christchurchnz.com) for all the wonderful opportunities available in Christchurch and the Canterbury district.**

**For enquiries contact Rob Hallinan, email [rob.hallinan@cdhb.govt.nz](mailto:rob.hallinan@cdhb.govt.nz)**

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## Australasian Society for Ultrasound in Medicine Multidisciplinary Workshop 2011 25 – 26 March 2011 Hilton Sydney, Australia [www.asummdw.com.au](http://www.asummdw.com.au)

### Associated Meetings:

DMU Preparation Course	23–27 March 2011
DDU Technical Seminar	23–24 March 2011
Annual Musculoskeletal Workshop	25–26 March 2011
Annual Cardiac Workshop	26 March 2011

### Convenors:

Dr Glenn McNally

Dr Sue Campbell Westerway

### Host Society:

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Website: [www.asum.com.au](http://www.asum.com.au)  
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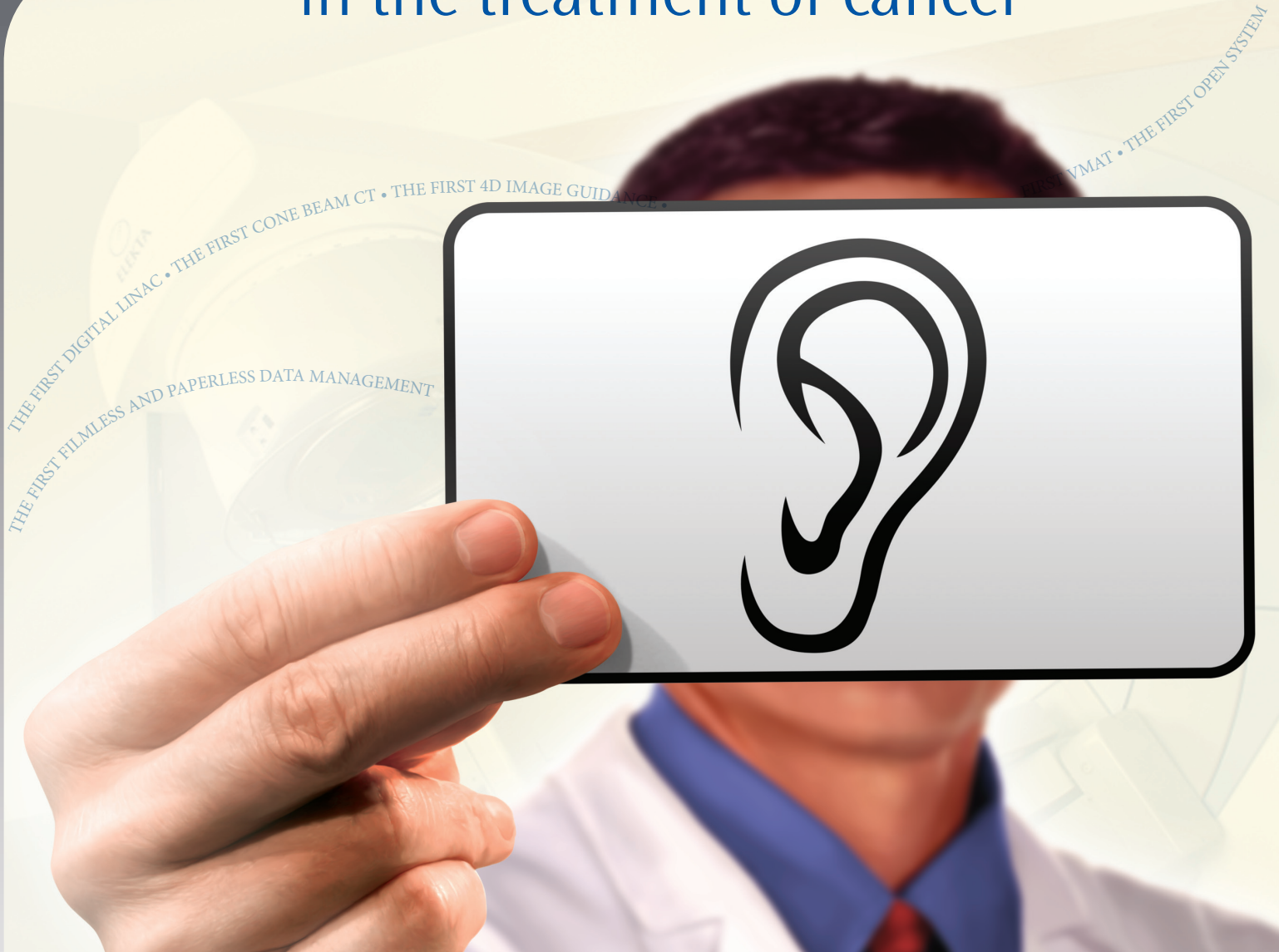
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