VMAT TREATMENTS COMMENCE
AT FACILITIES AROUND THE WORLD

- PROVIDENCE CANCER CENTER GOES FULLY ELECTRONIC
- CHINA INSTALLS WORLD’S FIRST ELEKTA COMPACT AT FUJIAN TUMOR HOSPITAL
- ADVANCED FUNCTIONAL STEREOTACTIC NEUROSURGERY AT AMC, AMSTERDAM
Dear Friends,

For more than 50 years, Elekta’s innovative technologies, products and clinical solutions have sought to transform the treatment of cancer and neurological conditions. The pioneering spirit that drove Professor Lars Leksell in his determination to improve outcomes for patients undergoing brain surgery has produced a steady stream of technological breakthroughs, a process that began with stereotactic surgery and evolved into radiosurgery with Leksell Gamma Knife®.

At Elekta, we take pride in building truly collaborative and long-term relationships. Over time we have come to know many of you as more than just customers: we have built mutual respect and trust, and from these long-term relationships a number of powerful collaborations have resulted. Recently we have added IMPAC and CMS, among other companies, to our portfolio, enabling Elekta to integrate solutions across the entire spectrum of cancer care.

The collaborative spirit that has resulted in the development of Leksell Gamma Knife® Perfexion™, Elekta Synergy® and Elekta Axesse™ is very much part of our strategy today. It is a key ingredient of our shared vision to stretch the boundaries of science and technology and ultimately improve, prolong and even save patient lives. The recent advances in radiation therapy and radiosurgery have been revolutionary; the improvements in computing power, the integration of 3D imaging into linacs, and precise and targeted dose delivery are all leading to real-time, adaptive treatment. The technologies of IGRT, IMRT and VMAT have made radiation oncology and radiosurgery a central and integral part of both curative and palliative care. Today we deliver intelligent and resource-efficient solutions that offer confidence to both healthcare providers and patients. For tomorrow, we see what’s possible—cancer treatment approaches as part of efforts to find a cure.
As Elekta has evolved from a dedicated neurosurgery company to a comprehensive provider, offering a broad range of solutions in cancer and neurological care, we have seen the need to adapt to the needs of our customers and their patients. To reflect the rapid advances in technology we are refocusing and reinvigorating our efforts to pioneer significant innovations and clinical solutions. We firmly believe that through human care we can make the future possible now.

At ESTRO and ASTRO you will see Elekta with a new face, reflecting our company today. We recognize our history and foundations, and the fact that we can now deliver a range of integrated solutions for diagnosis, treatment and follow-up of cancer and neurological disorders.

Elekta users will recognize our brands in the context of a larger whole; while we offer many different clinical solutions, each brand belongs to Elekta. The new face of Elekta also demonstrates the expansions we’ve made using open source concepts, unifying our product areas to provide you, our customers, with the very best set of tools to meet your clinical needs. We will continue to embrace solutions that offer you the choices and flexibility you deserve. We will do so with a united vision for human care and a commitment to creating new possibilities through innovation and collaboration.

This is an exciting time, as we seek to make the most of existing technologies and discover new clinical advances. Each and every one of us has a part to play in making this happen. Elekta will be there with you every step of the way.

**Tomas Puusepp**
President and CEO
Medical University Vienna Radiotherapy Team
(Left to right, back)
Markus Stock, Ph.D.,
Gabriele Kragl M.S.,
Karin Dieckmann, M.D.
(Left to right, front)
Ali Reza Homayuni,
Technician, Veronika Gaertner, Technician,
Dietmar Georg, Ph.D.

Volumetric Modulated Arc Therapy is now a reality, with several sites using this revolutionary advance in IMRT technology. Elekta VMAT delivers improved sparing of critical structures and significantly shorter treatment times while maintaining optimal target coverage, when compared with current delivery techniques. The speed and time savings with Elekta VMAT come from simultaneous control of the gantry’s speed of rotation, the dose rate, the MLC leaf positions, and the collimator angle, all while the radiation beam is on. With Elekta VMAT, the clinician chooses the best delivery method: one arc, two arcs, sub-arc or a combination.

MUW successfully treated its first VMAT patient on January 31, 2008, becoming one of the first facilities in the world to implement this innovative cancer treatment option. The patient was treated for glioblastoma, a serious brain tumor that was positioned near vital structures such as the brain stem and optical lenses and nerves. The treatment consisted of three non-coplanar VMAT arcs with collimator rotation and took just 10 minutes, including creation and evaluation of the patient’s brain images and treatment positioning.

Dietmar Georg, Ph.D., Associate Professor and Head of the Division of Medical Radiation Physics, Department of Radiotherapy, thinks VMAT has the potential to replace step-and-shoot IMRT.

“Elekta VMAT provides very fast delivery times. For most of our treatment plans we observed a treatment time reduction by a factor of two or even more. VMAT is applicable to many sites that are now treated with IMRT,” he says.
MUW uses Elekta Synergy® S for its VMAT treatments. “What is really amazing,” says Prof. Georg, “is the stability of the leaf positioning. We did a lot of QA testing prior to clinical implementation to see the performance, stability and reproducibility of the machine. We were very impressed. For example, we got excellent results when we compared the first arc with the other arcs.”

Daily 3D imaging with ultra low dose using Elekta VolumeView™ allows exact position verification, enabling fast, precise treatments. Prof. Georg says, “With true 3D imaging in two minutes, and treatment delivery of about five minutes or less, depending on the number of arcs, we can minimize the treatment time for precision radiotherapy applications.”

Prof. Georg predicts MUW’s Elekta VMAT capability will also resonate with the fact that patients are actively seeking the most advanced treatments. “Patients are aware of IMRT, and as they begin to hear about VMAT, they will begin to ask for it specifically.”

**ELEKTA VMAT IS A GO AT SWEDISH CANCER INSTITUTE**

Swedish Cancer Institute (Seattle, Washington, USA) has the largest cancer care program in the Northwest United States. The Institute recently completed its first treatment with Elekta VMAT, the first in North America.

Vivek Mehta, M.D., Director of the Center for Advanced Targeted Radiation Therapies at Swedish Cancer Institute, says the first VMAT patient was treated on Elekta Synergy® for pancreatic cancer. “We were able to reduce the dose to surrounding structures such as the spinal cord, kidneys and liver using Elekta VMAT. With this technology, we can now design treatments that are more aggressive, yet with fewer side effects.”

The clinical benefits to patients are enormous, adds Dr. Mehta. “Treatment times have the potential to be delivered in half the time of our current step-and-shoot plans.” Shorter treatments mean improved comfort for patients, helping them remain still throughout treatment and increasing the likelihood of a safe, accurate delivery.

David Shepard, Ph.D., is Director of Medical Physics at Swedish Cancer Institute. He says one of the key features of Elekta VMAT is that the beam rotates around the patient throughout delivery. “This has two critical advantages,” he says. “First, it gives more degrees of freedom in shaping the radiation dose distribution, so we are able to consistently improve the quality of our treatment plans. Second, Elekta VMAT is a significantly more efficient delivery technique, so treatment times are drastically shortened.”

He adds, “We have found that for complex cases such as in the head and neck region, the use of multiple arcs allows us to achieve a more uniform dose in the target and enables improved sparing of critical structures.

Dr. Mehta says the implementation of Elekta VMAT at Swedish Cancer Institute has advanced their overall mission. “We were among the first to begin using Image Guided Radiation Therapy (IGRT) utilizing cone beam CT technology, and now we’ve begun treating with VMAT. Improving patient care is our mission and we work daily to make that a reality.”

**“Elekta VMAT is a significantly more efficient delivery technique, so treatment times are drastically shortened.”**
“MOVING TO VMAT TREATMENTS IS REALLY A NATURAL PROGRESSION FROM IMRT, AND WILL REQUIRE LESS OVERALL TREATMENT TIME.”

“The Elekta control system automatically selects the optimal gantry speed and dose rate to deliver the prescribed dose, so the planned MUs are delivered without termination. The total absorbed dose at the isocenter is measured by a pinpoint ion chamber (0.06cc) with a cylindrical water phantom. The relative dose distributions in axial, sagittal and coronal planes are obtained by EDR2 film or Gafchromic film inside a plastic phantom. Then the measured isocenter dose and the dose distribution are simply compared by calculation.”

Dr. Nakagawa expects Elekta VMAT to be very well received in the region. “Dynamic conformal radiotherapy has been accepted for a long time in Japan, and University of Tokyo Hospital has been using Intensity Modulated Arc Therapy (IMAT) with static arc modulation for prostate cancer since November 2007. So Elekta VMAT will be readily accepted here. Additionally, Elekta VMAT is much faster than conventional IMRT, and the treatment planning and QA are easier than previous IMRT plans.”

BEAUMONT HOSPITAL THE LATEST TO TREAT WITH ELEKTA VMAT

Beaumont Hospital (Royal Oak, Michigan, USA), a long-time Elekta partner, treated its first patient with Elekta VMAT on September 8, 2008 using an Elekta Axesse™ system. The patient was treated with Stereotactic Radiosurgery (SRS) for spine lesions, an extremely delicate indication.

“We’re very excited to have completed our first treatment, a single fraction spine radiosurgery case,” says Martha Matuszak, Ph.D., Staff Physicist at Beaumont Hospital Royal Oak.

“It’s important that we have the option of using multiple arcs,” she continues. “This decreases the leaf motion and makes the delivery much smoother. We will likely use the multiple arc technique for spine, head and neck and large or irregularly-shaped tumors.” These more complex treatments will benefit from the flexibility to prescribe more than one arc.

The hospital will soon begin using its Elekta Synergy system to treat patients with VMAT as well, and plans to do hypofractionated treatments with Elekta VMAT in the near future. “Usually these cases require a high degree of conformity, and in many cases, a large number of gantry angles,” says Dr. Matuszak. “Moving to VMAT treatments is really a natural progression from IMRT, and will require less overall treatment time.”

“We’ve also seen a reduction in MUs compared to hypofractionated IMRT cases such as spine indications,” she adds.

See the newest VMAT case studies at www.elekta.com/proof.
ELEKTA INFINITY: OPTIMIZED FOR VMAT

Elekta has introduced another advanced tool to its innovative cancer treatment lineup in the United States: Elekta Infinity, a digital linear accelerator with ultra low-leakage MLC, optimized for delivering VMAT. Because Elekta Infinity uses VMAT with non-coplanar angles and non-trans-axial planes, it provides similar or improved dosimetric performance over helical tomotherapy. In addition, Elekta Infinity combines VMAT with VolumeView™ 3D cone beam CT imaging at the time of treatment.

Three sites are on the brink of optimal VMAT treatment capabilities with Elekta Infinity.

PRESBYTERIAN CANCER CENTER: DRAMATIC TIME SAVINGS ANTICIPATED

Presbyterian Cancer Center (Dallas, Texas, USA) recently purchased Elekta Infinity to bring state-of-the-art treatment technology to patients.

Kyle Antes, M.S., Director and Chief Physicist at Presbyterian Cancer Center, says there were two deciding factors in the order: Image guidance and VMAT. “This will be our first image guided linear accelerator, and we are very excited about the technology. Additionally, the ability to treat with the highest degree of accuracy will benefit our patients tremendously.”

He expects treatment times of head and neck patients to be reduced by half, from 30 minutes total to just 15 minutes. “This will make it easier for us to schedule patients, and easier on our patients, who no longer have to lie still with a mask on for 30 minutes.”

Antes says prostate treatments will be hypo-fractionated to shorten the length of treatment for patients. “This will give us a competitive advantage over other centers in our area; patients would prefer to go to radiotherapy on roughly half the number of days.”

“We are grateful that Elekta continues to allow all vendor systems to work with the linear accelerator technology,” adds Antes. “If we went with another manufacturer’s linac, we would have to change both our treatment planning system and our record and verify system in order to use their IMRT arc delivery. That’s not necessary with Elekta.”

RADIOLOGICAL ASSOCIATES OF SACRAMENTO: VMAT AND SRS WITH TWO NEW ELEKTA INFINITY SYSTEMS

In Sacramento (California, USA), two sites owned by Radiological Associates of Sacramento (RAS) are looking forward to treating with Elekta VMAT in mid-2009 on new Elekta Infinity systems. Patients at the Radiation Oncology Center at Sutter Cancer Care Center and the Roseville Radiation Oncology Center will benefit from shorter treatment times and highly conformal radiation.

Kathleen Dunlap is Chief Operating Officer for the Radiation Oncology Division of RAS. She says both practices treat more than 35 patients every day, for breast, prostate, head and neck and lung cancers.

“VMAT with Elekta Infinity will allow us to deliver treatment with more fields, higher doses, in less time, with better sparing of healthy tissue,” says Ms. Dunlap.

Along with Elekta Infinity, the two sites have ordered accessories that will enable clinicians to perform stereotactic radiosurgery (SRS). RAS also uses every available feature of MOSAIQ® image enabled oncology EMR.

“Our goal was to have a fully integrated, very efficient process for treatment delivery and workflow,” says Ms. Dunlap. “We’re now looking forward to a seamless process with Elekta Infinity and MOSAIQ, as well as the use of cone beam CT for VMAT and SRS.”

THOMPSON CANCER SURVIVAL CENTER: A NEW RELATIONSHIP WITH ELEKTA

At Thompson Cancer Survival Center (TCSC, Knoxville, Tennessee, USA), clinicians and researchers began using single rotation, constant dose rate volume modulated arc therapy (cdr-VMAT) more than 10 years ago. The added capabilities of Elekta Infinity, such as gantry rotation speed, collimator rotation and variable dose rate will now advance TCSC’s cancer treatment program to a new level.

Chester Ramsey, Ph.D., Director of Medical Physics at TCSC, says there are several reasons Elekta Infinity was chosen as the best solution for TCSC’s clinical needs.

“First, Elekta cone beam CT images are the best in the industry. Second, Elekta seamlessly integrates with MOSAIQ, the EMR we use for all cancer services at TCSC.”

In addition to these efficiencies, Dr. Ramsey expects time savings in other places as well. “With fixed-gantry IMRT delivery on other linear accelerators, it currently takes seven to 15 minutes to treat most of our IMRT patients. We estimate that treatment delivery times with Elekta Infinity will be reduced by at least 50 percent, without compromising treatment quality.”

“The clinicians and researchers at TCSC are extremely excited about our new relationship with Elekta,” he adds.
Before Providence Cancer Center (Portland, Oregon, USA) and its Leksell Gamma Knife® Center of Oregon opened in early 2008, its planners were committed to offering patients and their families comprehensive cancer services that rivaled the top cancer hospitals in the world. The $205 million, 493,000-square-foot facility was designed with a fully electronic environment for performing Image Guided Radiation Therapy (IGRT) and Intensity Modulated Radiation Therapy (IMRT), as well as Stereotactic Radiosurgery (SRS).

Before making purchase decisions, however, Providence undertook a year-long review of available systems.

“Our review process involved management, radiation oncologists, therapists, physicists and biomedical engineers,” says Duane Ilg, Manager of Radiation Oncology at Providence.

As a result of their research, Providence ordered two Elekta Synergy units, one Elekta Synergy S system and one Leksell Gamma Knife Perfexion unit.

In addition to lung, prostate, breast and head and neck cancers, the Center also treats a number of melanoma and renal cell cancer patients. Christine M. Cha, M.D., Medical Director, Radiation Oncology, at Providence Cancer Center/The Oregon Clinic, says, “Overall, we
treat a very sophisticated blend of complex cases. Because we have a fairly high volume, we wanted to be sure the equipment was backed by an excellent support staff and had less downtime. We’re enthusiastic about adopting new techniques and new technology, so we were very interested in having a system with a great IMRT, IGRT and SRS track record, and staying ahead of the technological curve."

Dr. Cha says the Providence corporate office was impressed by the compelling research the team had presented. As a result, all 25 hospitals in the Providence system now have an exclusive contract with Elekta for radiation oncology equipment. "We’ve ordered 12 or 13 Elekta linear accelerators in the past year," she says.

"Elekta was selected for its quality, R&D plans, reliability, service and customer support," says Marilyn Gannon, Regional Director of Radiation Oncology, Gamma Knife®, Breast/Appearance Center Operations. "And we have not been disappointed in our decision."

"We were very interested in having a system with a great IMRT, IGRT and SRS track record, and staying ahead of the technological curve."

"With the addition of the new Leksell Gamma Knife Perfexion, Providence can also provide SRS for patients with brain metastases and benign brain tumors," says Steven K. Seung, M.D., Ph.D., Director of the Gamma Knife Center of Oregon/The Oregon Clinic. "We are now on track to treat 170 patients with Gamma Knife® surgery this year."

The revolutionary design of Leksell Gamma Knife Perfexion expands the treatment reach for unlimited access to cranial targets, adds Dr. Seung. Because of the expanded anatomical reach and the optimized efficiency of this latest technology for Gamma Knife surgery, opportunities exist for Providence to treat substantially more patients with less effort than ever before.

COMBINATION OF UNITS COVERS FULL PATIENT POPULATION

Stephen B. Bader, M.D., Radiation Oncologist at Providence Cancer Center/The Oregon Clinic, agrees that purchasing Elekta equipment was beneficial to both staff and patients. "The combination of Elekta units we now have allows us to efficiently provide every kind of radiation therapy we need for our patient population. We offer everything from simple palliation, to IMRT for breast and large-field lung, to 3D conformal and IGRT for prostate and head and neck patients."

"Our three Elekta linear accelerators give us the ability to image patients at the time of treatment," says Duane Ilg. "By providing soft tissue and bony structure information, it shows us which organs are at risk and provides more accurate delivery of treatment. The two Elekta Synergy units allow us to treat the majority of our patients, and the Elekta Synergy S provides extracranial stereotactic radiation therapy, and still allows us to provide some more routine treatment courses."

"Our three Elekta linear accelerators give us the ability to image patients at the time of treatment," says Duane Ilg. "By providing soft tissue and bony structure information, it shows us which organs are at risk and provides more accurate delivery of treatment. The two Elekta Synergy units allow us to treat the majority of our patients, and the Elekta Synergy S provides extracranial stereotactic radiation therapy, and still allows us to provide some more routine treatment courses."

"With the addition of the new Leksell Gamma Knife Perfexion, Providence can also provide SRS for patients with brain metastases and benign brain tumors," says Steven K. Seung, M.D., Ph.D., Director of the Gamma Knife Center of Oregon/The Oregon Clinic. "We are now on track to treat 170 patients with Gamma Knife® surgery this year."

The revolutionary design of Leksell Gamma Knife Perfexion expands the treatment reach for unlimited access to cranial targets, adds Dr. Seung. Because of the expanded anatomical reach and the optimized efficiency of this latest technology for Gamma Knife surgery, opportunities exist for Providence to treat substantially more patients with less effort than ever before.

Left to Right: Left to Right: Stephen B. Bader, M.D., Radiation Oncologist; Christine M. Cha, M.D., Medical Director, Radiation Oncology; Marilyn Gannon, Regional Director of Radiation Oncology, Gamma Knife®, Breast/Appearance Center Operations
COMPLETELY PAPERLESS AND FILMLESS WITH MOSAIQ

The new Providence facility is completely paperless and filmless, thanks to the installation of MOSAIQ image-enabled electronic medical record (EMR).

The entire staff at the Center uses the MOSAIQ system, says Ms. Gannon. “We utilize almost all of its available features: quality assurance checklists, orders, patient QCL, billing and charge export, document management, electronic prescriptions, record and verify, medication reconciliation, audits and even intradepartmental communication via the mail messaging tool.” MOSAIQ enables several Providence sites to share information, allowing access to patient records from any location.

Choosing MOSAIQ oncology EMR was a logical decision, Dr. Bader says. “We had been using IMPAC for at least seven years, and we have added capabilities over the years to the full functionality we use today. The move to the new cancer center gave us an opportunity to transition to the paperless environment as we came into a new setting.”

“The transition to Elekta and IMPAC was relatively seamless,” says Dr. Bader. “With Elekta, we transitioned over one month from the old department to the new by starting all new patients in the new department while finishing the old patients on the other machines,” he says. “That enabled us to begin using the new equipment with the Elekta training team at our side.”

Dr. Cha says using MOSAIQ has significantly improved efficiency. “It lets us use remote access when we’re on call. There are no lost orders because a chart has been misplaced and there’s no going to the warehouse to pull a patient’s old fields.” She agrees that the transition to MOSAIQ has been very smooth. “We’d been using IMPAC for a long time and had a great relationship with them. It’s a relatively new version of MOSAIQ, so we keep finding new things we can do with it.”

In addition to MOSAIQ, Providence recently implemented SYNERGISTIQ™, an integrated workspace that consolidates management of the entire Elekta Synergy IGRT process into a single workstation. SYNERGISTIQ was first implemented on Providence’s Elekta Synergy S system. “Given the number of IGRT patients treated on our Elekta Synergy S, the therapists were especially pleased with the automatic loading and storing of X-ray Volume Imaging (XVI) data into the MOSAIQ application,” says Ms. Gannon. Because of the reliability of the SYNERGISTIQ system, Providence recently activated the system on its two remaining Elekta Synergy machines.

“Now physicians are able to view shifts and treatment modifications from their desktop PCs,” says Ms. Gannon. “IMPAC Software saves a great deal of time, and really improves our workflow.”
A leader in cancer treatment and technology, National Taiwan University Hospital (NTUH) will soon begin treating patients with Elekta VMAT in addition to its established IGRT program.

NTUH is one of the biggest hospitals in Taiwan, with 2,500 beds and a very large division of Radiation Oncology within the Department of Oncology, where more than 200 cancer patients are treated with radiotherapy every day. NTUH was the first hospital in the region to routinely use Image Guided Radiation Therapy (IGRT).

Jason Chia-Hsien Cheng, M.D., M.S., Ph.D. is Division Chief of the Division of Radiation Oncology, Department of Oncology, as well as Assistant Professor, Graduate Institute of Clinical Medicine at NTUH.

"In 2005, NTUH installed its first Elekta Synergy®, on which we now treat 70 patients a day, mainly for head and neck cancer and prostate cancer. The cone beam CT is used for 25-30 patients each day, and Active Breathing Coordinator™ for 2-3 patients." Sometimes a patient is treated for total body irradiation at the end of the day, he adds.

"This heavy work load depends on a stable machine and efficient work flow. We do not compromise the quality of treatment even with such a large number of patients."

Using Elekta Synergy for IGRT, clinicians are able to use fractionated radiotherapy more confidently, says Dr. Cheng. "We have different protocols using the cone beam CT for different applications. For prostate cancer patients, for example, we started using the cone beam CT in every fraction and have modified the protocol with daily use in the first, second and fifth weeks of treatment, and weekly..."
The use of IGRT across Asia, especially Taiwan, has grown rapidly in the past two years. This can be attributed to the influence of the United States’ acceptance and adoption of IGRT technology as the new standard in target verification at the time of treatment. Many of Taiwan’s clinicians were trained in the United States, and local practices closely follow U.S. standards.

Taiwan’s standard of cancer care services is very high, and it has the highest ratio of external beam radiotherapy systems to population in the region, at 130 systems to 24 million people. Recent cancer care initiatives throughout Asia have contributed to the acceptance and popularity of IGRT.

In both Korea and Taiwan, advanced treatment modalities such as Stereotactic Radiosurgery (SRS), Stereotactic Radiotherapy (SRT) and Intensity Modulated Radiation Therapy (IMRT) are well recognized and reimbursed. Radiation therapy in general is widely recognized and supported by healthcare and insurance systems.

In the developing countries of Asia, cancer is becoming a healthcare priority, and interest in IGRT has skyrocketed.

• The Pantai Medical Center is one of the leading franchises of private hospitals in Malaysia. Pantai’s flagship hospital in Kuala Lumpur is one of the most modern facilities in Malaysia. With its Elekta Synergy® system and products from Elekta Group, Pantai treated its first IGRT lung patient in June 2008 and has been treating with Volumetric IGRT routinely since then.
• Cipto Mangunkusumo General Hospital is the primary teaching institution in Indonesia, and has the largest and most modern radiation therapy department in the country. Cipto is equipped with Elekta Synergy® S and is the only IGRT facility in Indonesia. The hospital treated its first prostate IGRT patient in July 2008.
• The Bumrungrad International Hospital, Thailand, is one of the leading franchises in medical tourism, treating patients from all over Asia as well as the Middle East and North America.
• St. Frances Cabrini Medical Center has the first IGRT system in the Philippines and was one of the first medical tourism programs in the Philippines to offer high-end radiation therapy services. Using its Elekta Synergy, the site is scheduled to go clinical with 3D Volumetric IGRT in October 2008. The center will treat patients from all across Asia, especially Japan, as well as the Middle East and North America.

As more national budgets are directed toward healthcare and more clinicians and patients experience the precision of IGRT, the positive response to IGRT treatment will likely continue to rise.
Located in Fuzhou, the capital city of Fujian Province in southeastern China, Fujian Tumor Hospital is a 1,000-bed hospital specializing in cancer treatment, education and research. It treats about 10,000 patients a year.

The hospital previously had one Elekta Precise Treatment System™, one Siemens unit and one Theratron cobalt unit.

Jianji Pan, M.D., Deputy Director of Fujian Province Tumor Hospital, explains, “Because we had such a good experience with the Elekta Precise Treatment System and with Elekta services and support, we ordered the Elekta Synergy® system last year. We also ordered the HexaPOD™ evo robotic treatment table and stereotactic accessories for advanced IMRT and IGRT.” Prof. Pan adds, “We were treating patients from seven in the morning until 10 at night, and we still had a long patient queue due to the high demand.”

Continues ...
After learning about the Elekta Compact, which was developed and built by Elekta BMEI (Beijing, China), Fujian Hospital investigated the product offerings further. “We found that the Elekta Compact 6MV single photon machine would be a very cost effective solution for our department,” says Prof. Pan. Elekta Compact also has a modular design that enables new functions and features to be easily added.

Elekta Compact is a reliable, cost-effective solution for everyday radiation therapy, and is capable of delivering a range of radiation therapy techniques and interfacing with a variety of Elekta products and accessories. Its flexibility and large patient clearance means that treatment techniques can be optimized for patients of almost any size, and provides easy access for patient setup. The small footprint of Elekta Compact is ideal for installation into existing cobalt unit rooms or other small treatment areas.

With these two Elekta systems in the hospital, Prof. Pan expects to be better able to serve the hospital’s increasing numbers of patients, as well as the demand for precise radiation therapy treatment.

ELEKTA SYSTEMS INSTALLED AND READY FOR RTOG MEETING

On April 25-26, 2008, Fujian Province Tumor Hospital hosted the 3rd Pan-Pearl River Area Radiation Therapy Oncology Group Meeting. One of the major radiotherapy events in China, the gathering had more than 400 participants from southern China. “In order to demonstrate these two new Elekta products to the participants, I asked Elekta to complete the installation within six weeks. The Elekta team completed the mission perfectly and we had over 200 visitors witness first-hand the power of Elekta Synergy and the compactness and user friendliness of Elekta Compact,” says Prof. Pan.

Elekta Compact™ is not for sale in the USA, Canada or Japan.
There are four main indications for functional neurosurgery at the AMC Department of Neurosurgery: Parkinson’s Disease, essential and general tremor, and dystonia. Candidate selection is very important, as not every patient responds equally, and expectations can be unrealistic.

"Cure’ is a word we carefully avoid, as functional neurosurgery, almost by definition, does not cure the underlying disease that causes impairment, but only improves the patient symptomatically,” explains neurosurgeon Rick Schuurman, M.D., Ph.D. "Nevertheless, it does seem miraculous to see a patient who did not have voluntary control over her arm for years due to dystonia suddenly take hold of a cup and smoothly bring it to her mouth.”

ARRESTING SYMPTOMS WITH FEWER COMPLICATIONS

"Parkinson’s Disease (PD) is a neurodegenerative disorder in which the loss of dopamine production in the brain leads to tremor, hypokinesia, rigidity and balance disturbances,” says Dr. Schuurman. Dopamine or dopamine-agonists initially offer some improvement, but over time lose their effectiveness. Two techniques are available to treat PD: lesioning, in which tiny parts of brain tissue are ablated to disrupt abnormal pathways; and Deep Brain Stimulation (DBS), the implantation of electrodes in specific areas of the brain. Unlike lesioning, DBS can be adjusted over time.

Continues ...
“IN A STUDY PERFORMED BY OUR CENTER, IT WAS FIRST DEMONSTRATED THAT DBS IS AS EFFECTIVE AS LESIONING, BUT HAS FEWER SIDE EFFECTS AND IS THEREFORE GENERALLY PREFERABLE FOR PD.”

Dr. Schuurman says, “In a study performed by our center, it was first demonstrated that DBS is as effective as lesioning, but has fewer side effects and is therefore generally preferable for PD.”

Essential tremor, in which tremor is the only symptom, usually affects the arms, head and voice. “Essential tremor can sometimes be treated by drugs,” says Dr. Schuurman, “but DBS to the thalamus can produce excellent tremor reduction with fewer side effects.”

General tremor in other parts of the body can occur due to Multiple Sclerosis, stroke, trauma or other causes. These tremors also can be treated with varying degrees of success by lesioning or by thalamic DBS.

Dystonia is a group of neurological disorders characterized by sustained involuntary movements, leading to abnormal postures. They can be focal or widespread and can occur after part of the brain has been damaged (secondary dystonia), or when there is no underlying disease or visible abnormalities (primary dystonia). Dystonia can be treated successfully by pallidal DBS. Pallidotomy, which creates a tiny lesion on the globus pallidus, also is an option, but this carries a larger risk of side effects and is less effective.

ELEKTA SIMPLIFIES COMPLEX PROCEDURES

Dr. Schuurman uses Leksell Stereotactic System®, which includes Leksell SurgiPlan® for planning and Leksell® Neuro Generator for lesioning. Elekta Microdrive™ enables Micro-Electrode Recording (MER) during surgery. “Leksell Stereotactic System is a beautifully straightforward system to use. It’s very robust while being light and easy to handle,” says Dr. Schuurman. “Leksell SurgiPlan is an excellent tool for pre-operative target calculations and path planning, as well as post-operative confirmation of electrode placement.”

RESEARCH ADDS TO SUCCESS OF CLINICAL WORK

AMC is involved in several ongoing research projects. “We are looking into the long-term effectiveness of DBS as it’s currently applied, as well as improvements in surgical targeting and different ways of using DBS,” explains Dr. Schuurman. To that end, AMC is participating in a large nationwide study comparing DBS of the subthalamic nucleus to DBS of the pallidum in PD.

“We’re also studying the effects of DBS in certain psychiatric disorders, especially treatment-refractory Obsessive Compulsive Disorder [OCD],” Dr. Schuurman notes. “In our center, 16 patients with this disorder were treated with DBS electrodes implanted into the nucleus accumbens in the forebrain, and initial results were very promising.” Another trial is being designed for DBS treatment in a select group of patients with treatment-resistant major depressive disorder.

“I expect more worldwide interest in the treatment of psychiatric disorders with DBS,” explains Dr. Schuurman. “We obviously have to be very careful in designing clinical research projects to avoid the pitfalls that have given ‘psychosurgery’ a negative connotation.” He also predicts new targets will be found in the brain for existing indications such as metabolic disorders, and more sophisticated electrodes and methods for fine-tuning stimulation will be developed.
The EXTEND™ Program from Elekta creates new clinical potential by extending the utilization of Leksell Gamma Knife® Perfexion™ to even the most challenging cases. A complete system for non-invasive repeat fixation and workflow, the EXTEND Program enables clinicians to fractionate treatments.

Leksell Gamma Knife Perfexion provides the proven advantages of Gamma Knife® surgery, with enhanced features that set new standards in radiosurgery. The patented collimator design offers virtually unlimited ability for sculpting the dose distribution, enabling dynamic shaping with absolute accuracy.

Now, with the EXTEND Program, Leksell Gamma Knife Perfexion can be used to fractionate treatments, accommodating indications that were previously untreatable. This includes lesions that are too large or critically located to be safely treated in a single session, as well as treatment of lesions where the highest accuracy is not needed and a non-invasive fixation is preferred.

The EXTEND Program begins with a non-invasive stereotactic frame for the head. The rigid carbon-fiber frame, which is attached to the patient via a vacuum-assisted bite block, provides the most accurate non-invasive localization available.

The program uses advanced stereotactic indicators for CT imaging, as well as a control system component that’s installed on Gamma Knife Perfexion, with a special version of Leksell GammaPlan software to make workflow smoother and even more efficient, with all the tools necessary to manage staged or fractionated treatments.

While the minimally invasive Leksell® Coordinate Frame G represents the gold standard of fixation and localization, the benefits of the EXTEND Program are enormous to both clinicians and patients. It provides advantages for both stereotactic radiosurgery and stereotactic radiation therapy, offering a new tool for both neurosurgeons and radiation oncologists to treat more patients.

“The benefits of the EXTEND Program are enormous to both clinicians and patients.”

Perfexion, with a special version of Leksell GammaPlan software to make workflow smoother and even more efficient, with all the tools necessary to manage staged or fractionated treatments.

While the minimally invasive Leksell® Coordinate Frame G represents the gold standard of fixation and localization, the benefits of the EXTEND Program are enormous to both clinicians and patients. It provides advantages for both stereotactic radiosurgery and stereotactic radiation therapy, offering a new tool for both neurosurgeons and radiation oncologists to treat more patients.

The EXTEND Program frame can also be used in fractionated radiotherapy with Elekta Axesse™ or Elekta Synergy®. This provides an exciting bridge between neuro-oncology and radiation oncology for enhanced clinical applications, further strengthening Elekta’s dominance in stereotactic medicine.

EXTEND™ Program requires 510(k) review and is not yet commercially available in the United States.
It all started with a few friends at a summer cottage. Each had acquired a new, fairly unknown, but very exciting device called Leksell Gamma Knife®. The topic for the discussion was how this methodology could best be used for the benefit of patients with brain disorders.

Decades later, at the 14th International Leksell Gamma Knife Society Meeting, the topic is still the same: how to develop and share best clinical practices in Gamma Knife® surgery to help in the fight against tumors, vascular malformations and functional disorders.

With the theme of “Je me souviens...” ("I Remember...")], this year’s meeting took place May 18-22 at the historic Château Frontenac Hotel in Quebec, Canada, and attracted more than 500 neurosurgeons, radiation oncologists and other medical specialists.

Held two years after the initial unveiling of Leksell Gamma Knife® Perfexion™ in Seoul, Korea, interest was particularly high in the presentations given by clinicians who have treated patients with this new and exciting technology.

A special lecture was given by Professor Jean Régis of Timone University Hospital in Marseille, France. The presentation highlighted the unique dose shaping capabilities of Leksell Gamma Knife Perfexion, which treats a broader range of targets more quickly and efficiently than ever before. Prof. Régis and his team have treated more than 800 patients with Leksell Gamma Knife Perfexion.

**PIONEERS IN RADIOSURGERY AWARD**

During the meeting, the prestigious Pioneers in Radiosurgery Award was presented to John Flickinger, M.D., Professor of Radiation Oncology and Neurological Surgery at the University of Pittsburgh for his work on prediction of complications following Gamma Knife surgery. Dr. Flickinger pioneered the “integrated logistic formula” in his landmark paper of 1989. He has since conducted numerous studies on dose effects of Gamma Knife surgery in a diverse group of pathologies.

Previous recipients of the Pioneers in Radiosurgery Award include Steven Rasmussen, M.D., and Richard Marsland, R.N. of Butler Hospital, Rhode Island, USA; and Christer Lindquist, M.D., of Cromwell Hospital, London, UK.

They were awarded for their work in the treatment of Obsessive Compulsive Disorder using Gamma Knife surgery.

**STRONG INTEREST IN EXTEND™ PROGRAM**

The main crowd magnet in the exhibition area was the EXTEND Program from Elekta, a complete system for extending the utilization of Leksell Gamma Knife Perfexion.

The EXTEND Program enables neurosurgeons and radiation oncologists alike to treat new indications previously untreatable with Gamma Knife surgery, including lesions so large or critically located that not even Gamma Knife conformity is sufficient. In these cases, fractionation is a new alternative.
Elekta has relaunched its online e-catalog, resulting in a more refined, comprehensive look at the Elekta product line. The catalog features Elekta’s full range of systems and accessories in Stereotactic Neurosurgery, Radiosurgery, Stereotactic Radiation Therapy and Radiation Oncology.

Including the latest product developments, educational materials and descriptive text, the online directory provides readers with a comprehensive overview of Elekta’s offerings, as well as the opportunity to request additional information. A refreshing upgrade for customers, Elekta will continue to evolve and expand the e-catalog, eventually adding more products and services.

To view the new online directory, visit www.products.elekta.com.
REDEFINE

v. Give a new or different definition to; determine the essential quality of; re-determine the boundaries or extent of.
[syn: reformulate, recreate, reinvent.]

Elekta has been redefining the standard of human care for more than 50 years. Originally developed as an equipment supplier, today Elekta is a comprehensive healthcare partner. With solutions in Stereotaxy, Oncology and Software, our drive to improve human care has produced advanced technological breakthroughs such as Leksell Gamma Knife®, Elekta Synergy® and Elekta VMAT.

With a continued entrepreneurial spirit, Elekta is redefining the boundaries of science and technology to improve, prolong and save the lives of millions.

Picture Yourself...Redefining Human Care.

Redefining Human Care

www.elekta.com

Radiation Therapy • Radiation Oncology • EMR Medical Oncology • EMR Image Management • Treatment Planning • Laboratory Information Systems • Cancer Registry • Gamma Knife® Surgery

Corporate Head Office
Stockholm, Sweden
Tel +46 8 58 254 00
Fax +46 8 58 255 00
info@elekta.com

Worldwide Product Support Center
Tel +44 01293 654068
Fax +44 01293 654655
info.europe@elekta.com

North America
Atlanta, USA
Tel +1 770 300 9725
Fax +1 770 448 6338
info.america@elekta.com

Europe, South America,
Africa & the Middle East
Tel +44 1293 654068
Fax +44 1293 654655
info.europe@elekta.com

Japan
Kobe, Japan
Tel +81 78 241 7100
Fax +81 78 271 7823
info.japan@elekta.com

Asia Pacific
Hong Kong, China
Tel +852 2891 2208
Fax +852 2575 133
info.asia@elekta.com