Customer Perspective

Leksell Gamma Knife® Icon™ contributes to significant growth, greater efficiency and an enhanced patient experience

Contributors

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About

Mary Bird Perkins
Our Lady of the Lake Cancer Center

Location
Baton Rouge, Louisiana
United States

Staff
1 Leksell Gamma Knife Icon™ medical director
8 radiation oncologists
7 physicists
10 radiation therapists
6 nurses
9 partnering neurosurgeons

Patients
1,100 new radiation oncology patients per year

Technology
1 Leksell Gamma Knife Icon
2 Elekta linear accelerators
   • 1 Versa HD™
   • Elekta Infinity™
MOSAIQ® Oncology Information System
Leksell GammaPlan®
1 TomoTherapy System
1 Nucletron HDR brachytherapy afterloader
1 GE Lightspeed CT simulator
2 GE Discovery PET/CT scanners
1 1.5T Siemens MRI scanner
Variseed low-dose-rate brachytherapy planning software
MiM Maestro contouring and image fusion software
Philips Pinnacle treatment planning software
Mobius3D second check software

Todd Stevens
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“The frameless technology with the new Leksell Gamma Knife Icon platform was a game-changer that provides us with greater flexibility in how we use the device and in how we engage patients and physicians. Like many in the radiation oncology community, we foresaw an increasing shift toward management of brain metastases for patients with advanced disease. The ability to offer highly accurate and efficient frameless radiosurgery is critical to support the continued evolution of our program and to ensure success in bringing leading-edge care to our patients.”

Dr. Jonas Fontenot
Chief of Physics and Chief Operating Officer, Mary Bird Perkins Cancer Center

Developing a successful radiosurgery program

Mary Bird Perkins–Our Lady of the Lake Cancer Center in Baton Rouge is a premier destination for cancer care, where a dedicated team of nationally recognized oncology experts provides the most advanced technology and services. The Cancer Center is a partnership between Mary Bird Perkins and Our Lady of the Lake Regional Medical Center, providing destination cancer care for the Gulf South region.

Previously, the Cancer Center used the Novalis Brainlab device, installed in 2005, for its radiosurgery program. As this machine approached the end of its life, and with a growing need for stereotactic radiosurgery (SRS), the physics team and physician leaders began an exhaustive review of the radiosurgery needs and how they could advance the program to serve patients throughout the Gulf South.

Based on outcomes research, the review team identified Leksell Gamma Knife® as the gold standard for intracranial radiosurgery. The team also identified expanding evidence that patients with high performance status benefit from Gamma Knife® radiosurgery versus whole brain radiation. As a result, the review team recommended Leksell Gamma Knife but acknowledged that application of the stereotactic head frame, and the resulting “same-day” workflow required to care for patients, was a significant burden.

“As a result of the review team’s recommendation, we focused on how the Gamma Knife workflow, with the head frame, could be supported in our setting to expand availability to more patients who would benefit from the precision of Leksell Gamma Knife,” recalls Todd Stevens, President and CEO of Mary Bird Perkins Cancer Center. “Shortly thereafter, we learned about the launch of Leksell Gamma Knife Icon™ and how it would support a frameless treatment approach for certain patients. After seeing a demonstration at the 2015 ASTRO conference in San Antonio, Texas and following further consideration by the original review team, it was clear that Leksell Gamma Knife Icon would expand the use of this powerful technology, and we went to work collaborating with neurosurgeons, radiation oncologists and other physicians whose patients would benefit, to bring this technology on board.

“We knew from the literature that the dosimetric plan quality would be improved with Leksell Gamma Knife,” he continues, “so we were very much looking forward to bringing that feature into our program. In addition, the frameless workflow of Leksell Gamma Knife Icon provided the opportunity to fractionate treatments for certain cases, such as larger brain tumors, and to manage patients who are not candidates for single session radiosurgery.”
Unambiguous Growth

“We have seen a clear and unambiguous growth in our SRS volume (the pink bars) beginning almost immediately after we transitioned our program from LINAC to Gamma Knife technology. The added flexibility of the frameless workflow of the Icon device has further driven program growth through support for fractionated SRT treatments (the blue bars).”

Dr. Jonas Fontenot
Chief Physicist & COO
Mary Bird Perkins Cancer Center, USA

Figure 1.
Growth of the radiosurgery program following the implementation of Leksell Gamma Knife Icon in October 2016

Leksell Gamma Knife Icon training and installation

Elekta partnered with the cancer center in developing a training program for physicians and physicists, and helped them through the installation process—with the new Leksell Gamma Knife Icon going live in October 2016.

“As a regional-oriented practice, we had a large number of physicians who wanted to be trained and credentialed to use Leksell Gamma Knife Icon,” Dr. Fontenot comments. “Our accredited medical physics training programs also made it important to have several leaders in that department trained to support the program.

“As there were no domestic Leksell Gamma Knife Icon training programs at that time, Elekta helped us develop a curriculum training program specific to our project, with instructors coming to Baton Rouge to provide training on site. Training was split into two consecutive sessions, with staff divided into two groups, allowing us to train our team extremely efficiently. This—and the fact that we had already begun to introduce a frameless workflow with our previous linac-based program—was key to our being able to hit the ground running on day one when we went live with Leksell Gamma Knife Icon.”

Significant program growth

In the first year of using Leksell Gamma Knife Icon, the cancer center’s radiosurgery team expected to treat around 150 patients, which represented a threefold increase in radiosurgery patient volume. By October 2017, the cancer center had treated 185 patients with Leksell Gamma Knife Icon, representing significant program growth and exceeding all expectations (Figure 1).

“We have seen a clear and unambiguous growth in our SRS volume beginning almost immediately after we transitioned our program from LINAC to Gamma Knife technology. The added flexibility of the frameless workflow of the Icon device has further driven program growth through support for fractionated SRT treatments,” Dr. Fontenot explains. “Approximately 20 percent of our patient volume receives fractionated treatments for larger brain tumors or certain acoustic neuromas, so we are certainly making much greater utilization of this feature than we initially expected.

“In total, about 70 percent of Leksell Gamma Knife Icon patients are treated for brain metastases, and we’ve been able to treat about 85 percent of all patients without a frame,” he adds.
“We still use the head frame for certain functional disease management cases—specifically for trigeminal neuralgia—based on the magnitude of the prescribed dose and our previous experience,” Dr. Fontenot continues. “However, I envision that within the next 6–12 months, we will be able to transition to a frameless workflow for most of these cases as well, as we continue to accumulate experience and gain further confidence with expanded uses for this powerful device.”

Expanding radiosurgery case mix

As mentioned previously, the ability to fractionate Leksell Gamma Knife Icon treatments has allowed the cancer center to bring certain larger primary brain tumors and functional cases into their radiosurgery program. In addition, Leksell Gamma Knife Icon technology has improved options for patients with multiple brain metastases.

“We with our previous program, we were limited to treating 2–3 metastases at a time,” Dr. Fontenot explains. “The alternative for many patients with multiple brain metastases was whole brain radiation therapy (WBRT), with the associated greater risk of neurocognitive decline compared to SRS. Since we introduced Leksell Gamma Knife Icon to our program, we have seen a decline in the number of patients receiving WBRT, as we can now treat each individual metastatic lesion on Leksell Gamma Knife Icon, even if the patient presents with 30–40 metastases. Furthermore, we can spread the treatment over 2–3 days, so it’s not so onerous for the patient as having them all treated in a single session.

“We are treating more functional cases as well—including more trigeminal neuralgia and acoustic neuroma cases than we previously did—because providers and patients are attracted to this technology,” he adds. “We are seeing referrals—not just from within our primary service area, but with some of our secondary and tertiary service areas as well.

“I have been extremely impressed with the precision of the device. It’s exceptional, and the quality of the dose plans has exceeded our expectations.

It’s a program that we are very proud to have brought to our community,” Dr. Fontenot continues. “Now, with a year under our belt, our confidence in Leksell Gamma Knife Icon is allowing us to explore additional indications that are of interest to us, to see if we can further expand the capabilities we have here locally.”

The value of the tips outlined above is supported by the clinical and financial benefits the Cancer Center has achieved since implementation of its new Icon system. These include cost-efficiencies enabled by the acquisition of software that allows pre-treatment prep work, imaging and treatment planning to be conducted at other Mary Bird Perkins’ facilities throughout southeast Louisiana, close to where patients live, minimizing the number of trips they need to make to Baton Rouge for treatment. This software also facilitates collaboration among providers located at different facilities across the Mary Bird Perkins network, helping to ensure seamless patient care and sharing of knowledge that can help enhance outcomes on a network-wide basis.
Planning Ahead

The work that can be done in advance provides for a streamlined workflow for the team and an even better patient experience.

“The ability to scan and plan in advance, and then to bring the patient back for treatment delivery on a different day, allows us to be more efficient in our processes and in how we resource our Leksell Gamma Knife Icon patients,” Dr. Fontenot explains.

“Having the flexibility to prepare patient plans over the course of several days rather than several hours—and the ability for physicians to engage and collaborate with other providers along the way—has been invaluable,” he continues. “It allows staff to interact in a productive way to find the best approach for patients. This planning and interaction can proceed while the patient is going about their normal life, not isolated in a room with a head frame on. They simply come back a week later and walk straight into the treatment suite. They’re set up, receive their treatment, then get up and go home.”

Renee A. Levine, MD, APMC, medical director of the Cancer Center’s Gamma Knife Icon Program, commented, “We have the ability now with Icon to use a mask that prevents us from bolting a frame to a patient’s head. It’s definitely more comfortable for the patient.”

“The frameless workflow frees up nurses and many other resources,” Stevens adds. “Previously the patient had to have the head frame fitted and then wait in a room for hours while the treatment plan was prepared. This required staff to check on them throughout the day—and all the time the clock was ticking, adding pressure on the physics and treatment teams as they worked on that one case.

“In a frameless environment, several patients can have an MRI scan on the same day,” he explains. “It can be performed here in Baton Rouge or by one of our partners in other locations, providing flexibility and choice for patients and providers. Then, planning can commence organically over the next few days, drawing in a multidisciplinary team as required for each case. We even have the technology to allow physicians, neurosurgeons and other staff to participate in the planning process remotely, which is an even more convenient and efficient way of working.

Furthermore, patients at other Mary Bird Perkins locations can have imaging and other preparations performed close to home, reducing the number of trips they must make to Baton Rouge for treatment.”

Promoting Leksell Gamma Knife Icon capabilities

Through marketing, the cancer center began telling patients and physicians about Leksell Gamma Knife Icon approximately six months before going live. Once the technology was installed, physicians and other key stakeholders were invited to view the system and to hear from Dr. Dheerendra Prasad—a Leksell Gamma Knife expert from Buffalo, New York—in a series of events designed for physicians.

Once Leksell Gamma Knife Icon was operational, the cancer center launched its ‘Conquer Differently’ marketing campaign, which focuses on the personalized approach of this technology through patient and physician testimonials. The Conquer Differently microsite includes sections for patients and physicians and offers downloadable brochures for these key audiences.
“Our network has really embraced the technology,” Stevens comments. “The level of engagement from board members, patients, clinical staff, physicists and the neurosurgery community in Baton Rouge has been really encouraging. Leksell Gamma Knife Icon has brought an enhanced multidisciplinary approach between physicians, radiation oncologists, neurosurgeons and others—which has taken this program to the next level.

“When you ask the physicians we work with about Leksell Gamma Knife Icon, their eyes light up,” Stevens continues. “We’ve had great feedback. Charles Wood, MD, the Cancer Center’s Medical Director of Radiation Oncology, said, ‘Leksell Gamma Knife Icon allows us to focus a high dose of radiation on a pinpointed area, like you’re painting the tumor with a paintbrush.’”

“This thought was the impetus for the Conquer Differently campaign,” Stevens adds. “In addition, our partnering neurosurgeon, Kelly Scrantz, MD said, ‘Leksell Gamma Knife Icon has been a game-changer and I’m very excited to be able to offer Gamma Knife as a treatment for patients with brain tumors and pain symptoms.’

“We’ve worked hard to promote the capabilities of Leksell Gamma Knife Icon through our website, at conquerdifferently.org, social media and other avenues,” Stevens concludes. “We’ve seen a tremendous response to these initiatives and to the availability of Leksell Gamma Knife Icon here in South Louisiana and beyond. We are confident that the investment was valuable for our community and that it is a sustainable program for the future. We know it’s going to continue to benefit patients for a long time to come.”

Disclaimer
According to Leksell Gamma Knife intended use, limitation of tumor sizes is from a few millimeters to several centimeters.
We are healthcare technology innovators, specializing in radiotherapy treatments for cancer and brain disorders.

We help clinicians to improve patients’ lives through our forward-thinking treatment solutions and oncology informatics, creating focus where it matters to achieve better outcomes.