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CONQUEST

Pilots of the OR

Anesthesia team focuses on the patient

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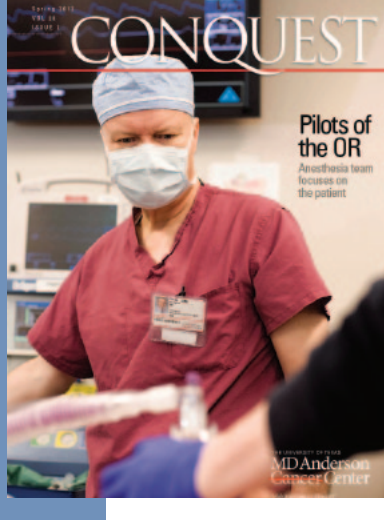

On the cover: David Ferson, M.D., specializes in anesthetizing patients before and during the delicate surgery called awake craniotomy.

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ACADEMIC INSIGHT, INDUSTRIAL EXECUTION

Institute for Applied Cancer Science gears up to develop better drugs faster

By Scott Merville

As academic scientists, Giulio Draetta, M.D., Ph.D., and Lynda Chin, M.D., cultivate the patient, long-term research that builds the foundation for understanding and attacking cancer biology. It's the type of discovery-oriented work published in top scientific journals: Cell, Nature and Science.

As leaders of MD Anderson's new Institute for Applied Cancer Science (IACS), they've built a team of veteran scientists to swiftly and thoroughly evaluate cancer drug target candidates and ruthlessly select likely winners. This effort is designed to decrease the staggeringly high failure rate of cancer drugs entering clinical trials — today, 19 of 20 drugs entering human testing fail to achieve approval by the U.S. Food and Drug Administration.

Giulio Draetta, M.D., Ph.D.

"We want to kill a project quickly and early," says Chin, professor and chair of MD Anderson's Department of Genomic Medicine, as well as scientific director of the IACS. "Our approach is to conduct a comprehensive analysis on the target at the preclinical stage to validate its essential role in cancer and determine the specific cancer types in which such a target is mission critical. This knowledge will dramatically increase the probability of success of drugs against that target in the clinical testing stage."

For the institute, Draetta notes, "Papers in first-rate journals aren't the true measure of success. New compounds delivered for clinical trial backed by rigorous, comprehensive and reproducible science are the ultimate merit by which we will all be judged."

Progress in cancer treatment has come via an inefficient process. As noted, only 5% of preclinical candidates become effective, approved drugs. As a result of such a failure rate, developing a new drug takes a long time (on average seven to 12 years), and it may cost more than $1 billion to go from "target" to "drug" to "trial" to "approval."

Innovation in drug development

Accelerating drug development will require seamless integration of rigorous discovery science spanning genomics, computational science, cancer biology, molecular pathology and more. Equally important, this knowledge must be driven toward clear drug development endpoints through an "applied" engine governed by disciplined timelines and goals. This requires a culture that integrates the scholarly brilliance and creativity of academia and the effective management principles of industry, respectively, Chin says.

Lynda Chin, M.D.

The new institute is essentially an agile biotech company embedded in an academic setting. The plan is to:

- exploit the transformative advances in cancer genomics, genetics and biology to identify the best cancer-driving molecular targets,
- execute a research plan designed to elucidate key biology relevant to drug discovery and reach "go/no-go" decisions efficiently and
- develop drugs most likely to succeed by applying industry-level criteria, as well as building a body of biological insights around the drug that will enable its successful clinical development.

"There's no question that academia is best at the basic discovery science," says Draetta, professor in the Department of Genomic Medicine and director of IACS. And academia excels with its clinical trials at the end of drug development.

Between those landmarks lies what Chin calls "the valley of death" for candidate drugs, the translational research steps needed to reach Phase I clinical trials.

Bridging that gap requires a goal-oriented culture and seasoned professional scientists with world-class expertise in drug discovery as well as in genomics, computational biology, deep cancer biology and model systems.

Draetta and Chin are former leaders of the Belfer Institute for Applied Cancer Science in Boston. The Belfer Institute was the first iteration of this academic-industry construct launched by Chin and current MD Anderson President Ronald DePinho, M.D.

MD Anderson's new institute builds on the Belfer Institute's model, but with internal drug discovery capability and expansion to translational medicine. Draetta and Chin have been joined by 18 scientists from Belfer and plan to have 70 scientists on board by year's end.

Their industrial experience, coupled with MD Anderson's research capabilities and clinical excellence present an unprecedented opportunity to improve cancer drug development.

Kirstin Barnhart, D.V.M., Ph.D., works with rhesus monkeys to study the efficacy of a new weight-loss drug.

DRUG THAT STARVES FAT CELLS WORKS FOR OBESE MONKEYS

First clinical trial for obese prostate cancer patients coming

By Scott Merville

Obese rhesus monkeys treated with an experimental drug that starves fat cells by destroying their blood supply lost, on average, 11% of their body weight in four weeks.

Treatment also slimmed the monkeys' waistlines, reduced their body mass index (BMI) and decreased body fat. All measurements were unchanged in untreated monkeys.

"Development of this compound for human use could provide a non-surgical way to actually reduce accumulated fat, in contrast to current weight-loss drugs that attempt to control appetite or prevent absorption of dietary fat," says co-senior author Renata Pasqualini, Ph.D., professor in MD Anderson's David H. Koch Center for Applied Research of Genitourinary Cancer.

Most drugs developed to treat obesity focus on suppressing appetite or increasing metabolism, but both approaches have been thwarted by toxic side effects.

The MD Anderson group designed a new drug, Adipotide™. It includes a homing component that binds to a protein on the surface of fat-supporting blood vessels and a synthetic peptide that triggers cell death. With their blood supply gone, fat cells die and metabolize.

Obesity raises cancer risk, worsens treatment outcomes

"Obesity is a major risk factor for developing cancer, roughly the equivalent of tobacco use, and both are potentially reversible," says co-senior author Wadih Arap, M.D., Ph.D., professor in the Koch Center. "Obese cancer patients do worse in surgery, with radiation or on chemotherapy — worse by any measure."

The monkeys in the study were "spontaneously" obese, says Kirstin Barnhart, D.V.M., Ph.D., assistant professor in MD Anderson's Department of Veterinary Sciences and veterinary clinical pathologist at MD Anderson's Keeling Center for Comparative Medicine and Research in Bastrop, Texas. Nothing was done to make them overweight. They did it the way humans do, by eating too much and avoiding physical activity.

The researchers are preparing a clinical trial in which obese prostate cancer patients would receive daily injections of Adipotide for 28 days. "The question is: Will their prostate cancer be affected if we can reduce their body weight and the associated health risks?" Arap says.

The monkeys regained their lost weight after treatment ended, suggesting that the best general use of the drug, if it proves effective in humans, might be to jump-start a weight-loss program.

NEW DRUG CONTROLS CLL IN CLINICAL TRIALS

Works without suppressing bone marrow

A promising oral drug for chronic lymphocytic leukemia (CLL) has produced durable remissions for patients in clinical trials without triggering a debilitating side effect that's common with existing treatments.

"PCI-32765, one of a new class of experimental drugs called B-cell receptor inhibitors, has shown impressive potential in these clinical trials for its effectiveness and particularly for its relatively minimal toxicity," says lead investigator Susan O'Brien, M.D., professor in MD Anderson's Department of Leukemia.

Of 27 CLL patients treated at a dose of 420 milligrams daily, 70% had complete or partial remission at 10.2 months of median follow-up. Six-month, progression-free survival was 92%. Similar results were seen among 34 patients treated at an 840 mg dose.

CLL is treated with combination chemotherapies that can cause myelosuppression — inhibited bone marrow function leading to decreased production of blood cells. The resulting susceptibility to infection can be a serious problem for patients, O'Brien says. "PCI-32765 is not myelosuppressive."

VORINOSTAT ENHANCES TREATMENT FOR AML

National trial tests drug with frontline therapy

Adding a drug that activates genes to frontline combination therapy for acute myeloid leukemia resulted in an 85% remission rate after initial treatment. Study patients received the drug vorinostat combined with chemotherapy drug cytarabine and idarubicin, an anthracycline antibiotic commonly used as chemotherapy.

Vorinostat, known commercially as Zolinza®, is a histone deacetylase inhibitor — an exciting new class of potential anti-cancer agents for treating solid and hematological (leukemias, lymphomas and myeloma) cancers.

"The overall response rates are encouraging, and most higher risk patients did very well," says Guillermo Garcia-Manero, M.D., professor in MD Anderson's Department of Leukemia and lead investigator on the study.

He will be the principal investigator on a national Phase III clinical trial with this combination, conducted through the National Cancer Institute's Cooperative Oncology Groups.

GUIDANCE FOR MYELODYSPLASTIC SYNDROMES

Prognostic model for cancer therapy-induced MDS

A large-scale analysis of patients whose myelodysplastic syndrome (MDS) is related to earlier cancer treatment overturns the notion that all of them have a poor prognosis. MDS is characterized by a deficiency in the number of blood cells caused by bone marrow that is not functioning correctly.

"MDS patients whose disease springs from earlier radiation, chemotherapy or both treatments are usually told that they have a poor prognosis. But by analyzing survival risk factors in a large patient population, we've found these patients fall into good, intermediate and poor prognostic groups," says study leader Guillermo Garcia-Manero, M.D.

Understanding their differing characteristics will better guide treatment decisions for these patients, he says.

The research team analyzed 1,950 MD Anderson patients treated between 1998 and 2007. It found 438 had been treated for cancer before their MDS diagnosis. Of these, 279 patients who had received chemotherapy, radiation therapy or both were analyzed.

A first round of analysis identified at least 15 factors associated with overall survival when considered as isolated, single variables. Next, the researchers conducted a multi-variable analysis that narrowed factors, reducing those that affect overall survival to seven.

Studies led by Guillermo Garcia-Manero, M.D., professor in the Department of Leukemia, have shown positive results for patients with acute myeloid leukemia and myelodysplastic syndromes.

RESULTS OF THESE THREE STUDIES WERE REPORTED IN DECEMBER 2011 AT THE 53RD ANNUAL MEETING OF THE AMERICAN SOCIETY OF HEMATOLOGY.

NEW COMBINATION IMPROVES SURVIVAL FOR METASTATIC BREAST CANCER PATIENTS

In an international Phase III randomized study known as BOLERO-2, everolimus combined with the hormonal therapy exemestane has dramatically improved progression-free survival for women with metastatic breast cancer.

Everolimus, an immunosuppressant agent first used to prevent rejection of organ transplants, also has anti-angiogenic properties that prohibit a tumor from forming its own vascular system.

The 724 metastatic breast cancer patients enrolled in the trial were all post-menopausal, had hormone receptor-positive disease and evidence of progressive disease. The median age was 62. The study's primary endpoint was progression-free survival.

In patients receiving the everolimus combination, researchers found a progression-free survival of 7.4 months, compared to 3.2 months in those who took exemestane alone, a finding described as "highly significant." The clinical benefit rate — complete responses, partial responses and stability exceeding six months — was 50.5% in those in the combination arm, compared to 25.5% in those who received hormone therapy alone.

"Over the years, our treatment approach for such women with metastatic breast cancer has been sequential use of as many hormone therapies as possible, keeping metastatic disease under control for as long as possible," says Gabriel Hortobagyi, M.D., professor and chair of the Department of Breast Medical Oncology.

"These findings may allow us to change our approach. In this group of heavily pre-treated patients, all of whom progressed on prior endocrine therapy, the addition of everolimus resulted in significant prolongation of progression-free survival and an improved response rate with only modest toxicity."

REPORTED IN THE FEB. 9, 2012, EDITION OF THE NEW ENGLAND JOURNAL OF MEDICINE.

For more information about these and other research findings, visit www.mdanderson.org/newsroom, or the Cancer Frontline blog at www2.mdanderson.org/cancerfrontline.

Gabriel Hortobagyi, M.D., says results of an international Phase III study of the combination of everolimus with the hormonal therapy exemestane are "highly significant."

STUDY QUESTIONS POPULAR RADIATION CHOICE FOR BREAST CANCER

An increasingly popular treatment choice for women with early-stage breast cancer may not be the answer for everyone. According to MD Anderson researchers, partial breast irradiation (APBI) brachytherapy is associated with a higher rate of later mastectomies, increased radiation-related toxicities and post-operative complications compared to traditional whole breast irradiation.

While there are numerous types of APBI, the MD Anderson study only looked at the brachytherapy technique. This radiation treatment involves insertion of a catheter containing a radioactive source to kill breast cancer cells that may remain after lumpectomy surgery. A specialized catheter is surgically inserted into the cavity left behind after tumor removal. APBI is performed a few weeks after a lumpectomy, twice daily over a course of five to seven days.

For this retrospective population-based study, the MD Anderson team used Medicare claims to examine the treatment history of 130,535 women age 66 and older diagnosed with early-stage, invasive breast cancer, from 2000 to 2007. All the women were treated with breast-conserving surgery followed by either APBI, delivered by brachytherapy, or traditional radiation therapy.

"APBI brachytherapy has grown in popularity during the past decade as earlier studies showed generally low cancer recurrence rates. However, most prior studies have not directly compared the treatment's outcomes to traditional radiation therapy," says Ben Smith, M.D., assistant professor in the Department of Radiation Oncology and the study's senior author.

RESULTS OF THESE TWO STUDIES WERE REPORTED IN DECEMBER 2011 AT THE 34TH ANNUAL MEETING OF THE CANCER THERAPY AND RESEARCH CENTER-AMERICAN ASSOCIATION FOR CANCER RESEARCH SAN ANTONIO BREAST CANCER SYMPOSIUM.

SCOTT MERVILLE, SANDI STROMBERG AND LAURA SUSSMAN CONTRIBUTED TO FRONTLINE

The pilots of the OR

Anesthesia team focuses on the patient

By Mary Brolley

Outside, a winter storm brings lashing winds and heavy rain to Houston. But in a surgical suite in MD Anderson's Main Building, Nicolas Salazar is waking up in a hushed room.

Coming out of anesthesia, he recognizes a kind face. David Ferson, M.D., professor in the Department of Anesthesia and Perioperative Medicine, smiles and gently clasps his hand. "You're doing very well, Nicolas," he says softly. "How do you feel?"

And with that, the most important member of the team for an awake craniotomy, in which the patient is conscious and talking for a portion of the surgery, has arrived.

'Mapping the brain' before removing the tumor

A 63-year-old insurance broker from Lima, Peru, Salazar is having his second brain surgery in as many months. Diagnosed late in 2011 with a central-brain glioblastoma, he underwent surgery in Lima in December. But the tumor was too difficult for the surgeons to remove, so Salazar and his family came to MD Anderson.

Lead neurosurgeon in Room 23 is Raymond Sawaya, M.D., professor and chair of the Department of Neurosurgery, assisted by fellow Lana Christiano, M.D. Before awakening the patient, they opened his skull to expose the brain.

Now they will "map" the brain, with Salazar's help.

The awake procedure is ideal for certain brain tumors because the surgeon can trace the contours of the patient's tumor to ensure that areas of the brain that control speech and movement are not involved. The goal is to excise as much of the tumor as possible without harming the patient's ability to think, speak, move or reason.

Nicolas and Milagros Salazar of Lima, Peru, are grateful for the skilled medical teams that made his brain surgery successful.

In such a procedure, the anesthesia team first sedates the patient intravenously, then inserts a laryngeal mask airway for more precise control and delivery of the mix of anesthetics and sedatives. Once the patient is deeply asleep, the anesthesiologist administers a scalp block to completely numb the patient's scalp for the surgery.

After the brain is exposed, the surgeon asks the anesthesiologist to awaken the patient so he or she can answer questions designed to demonstrate that speech faculties are intact.

'What do you see right now?'

Ferson shows Salazar a series of laminated flash cards, and Salazar names what he sees in Spanish and English. "Bull, *toro*. Train, *tren*. Shirt, *camiso*," he says.

On the other side of the drape, Sawaya administers light electrical charges to areas of the brain. Salazar stumbles only once or twice, and Sawaya makes note of that.

Throughout, Ferson offers the patient ice chips, reassures him he's doing well and clasps his hand. He focuses solely on Salazar and Sawaya. Behind him, James "Monie" Perry, certified registered nurse anesthetist (CRNA), keeps his eyes on the complex machines that indicate the patient's vital signs.

Once the brain is mapped and the tumor is removed, Sawaya asks Ferson and Perry to put Salazar back to sleep for the rest of the operation.

Preparations and teamwork crucial to success

The day before surgery, Salazar, like all surgical patients at MD Anderson, has an appointment at the Anesthesia Assessment Center, where his case is evaluated and he and his family are educated about the awake craniotomy. The comprehensive evaluation also takes into account any pre-existing conditions that require special preparations before surgery.

The Department of Anesthesia and Perioperative Medicine consists of 65 anesthesiologists, 75 CRNAs and 20 anesthesia technicians and technologists, who make sure supplies are available and assist wherever needed.

Thomas Rahlfs, M.D., professor and chair of the department, is proud of his talented and productive team, which he believes is equal to the ever-growing demand for services.

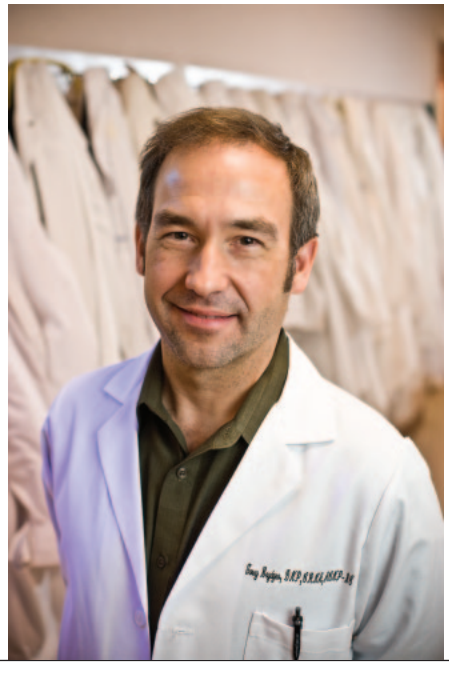
In fact, he has big plans.

More time for research and education a priority

"We want to shift our faculty's focus from strictly clinical to making time for research and education," he says. "We actively recruit to ensure the staffing that makes that feasible.

"It's a culture shift," he acknowledges. "We've been 100% clinical, but we know how important it is to give our faculty time to pursue research or identify best practices."

The department's work would be impossible without the dedication and skill of scores of CRNAs. Garry Brydges, chief nurse anesthetist, has been with the department 10 years. The training and education required of his CRNA staff is rigorous, he says.



Garry Brydges, chief nurse anesthetist, leads the department's 75 certified registered nurse anesthetists.

Thomas Rahlfs, M.D., professor and chair of the department, believes his team is equal to the challenges and demands of serving MD Anderson patients both in and out of the operating room.

James "Monie" Perry, CRNA, Vivian Porche, M.D. (center), and Shannon Popovich, M.D. (right), all in the Department of Anesthesiology and Perioperative Medicine, walk across the skybridge leading out of the surgery suites.

All have at least master's degrees and have worked a minimum of one year in an intensive care unit (ICU) before entering training. This gives them exposure to a wide variety of complex cases.

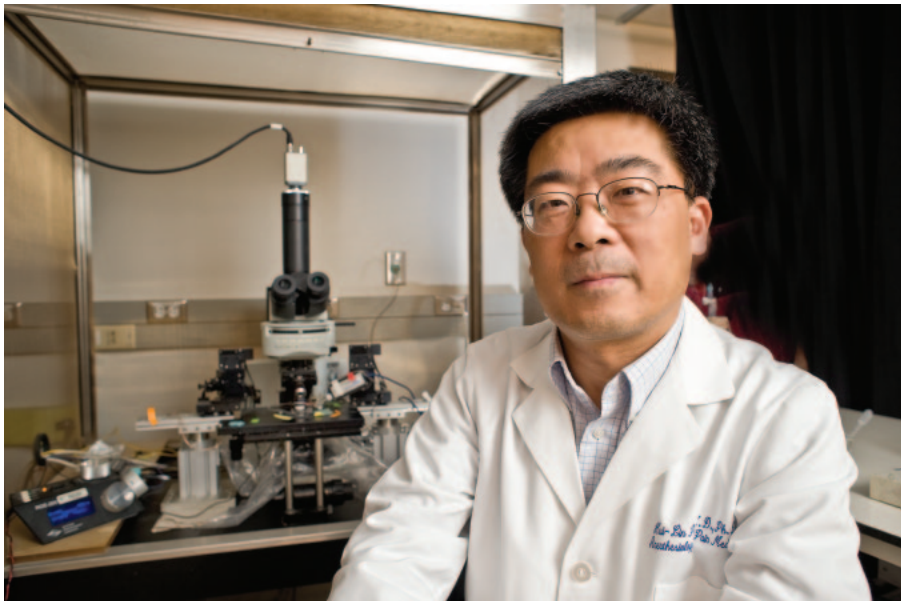
"It's one of those intangibles," Brydges says. "ICU nurses carry out orders from a variety of specialists and master all the frontline lifesaving equipment. So those skills are honed even before anesthesia school."

Induction (putting the patient to sleep) and emergence (waking up the patient) are the most critical parts of any anesthetic procedure, he says.

Samantha Sattari, a CRNA who's been at the institution 11 years, describes the anesthesia team's mission in a novel way. "We're the pilots of the OR," she says. "We make sure the patient takes off and lands safely."

There's an excitement — a thrill — to the work, she says. Even so, "When something unexpected happens, we stay calm." Especially challenging are patients who have serious medical problems or devices such as pacemakers. Fortunately, the knowledge gathered in the pre-surgery assessment allows for preparation.

"With really sick patients, we're hyper-vigilant. But we're a team with myriad helping hands," Brydges says.



Hui-Lin Pan, M.D., Ph.D., is a professor and director of the research arm of the department, which ranks in the top 15 of anesthesia departments for grants from the National Institutes of Health.
He and his team research the chronic pain caused by nerve damage that occurs in surgery. "We want to know why what seems like a minor injury during surgery can cause lasting pain," he says. He hopes to discover how the nerve damage causes persistent pain, then develop the best treatments for this pain.

Experts 'run the board' with an eye to staffing, efficiency

Running MD Anderson's 31 Main Building operating suites requires focus, collaboration, diplomacy and finesse. Not to mention a giant white board and an online tool to keep track of OR capacity.

Front and center is the large white board listing all the surgical rooms, what's happening in each and who's staffing them.

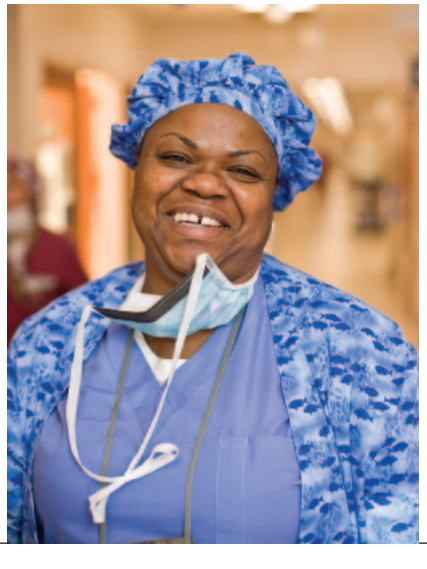
Three days a week, Vijaya Gottumukkala, M.D., professor in the department, "runs the board." He assures that staffing is adequate and rooms are used efficiently.

Gottumukkala also uses an online tool that tracks expected (and actual) demand hour by hour throughout the suites. Whoever is in charge updates the system constantly, and anyone trying to schedule a surgery can look at availabilities weeks and months ahead. Even so, there must be some leeway in the schedule for emergency surgeries, he says.

'The fifth vital sign'

In addition to the neuroanesthesia required for awake craniotomies, the department supports other special anesthetic needs of surgeries or procedures.

For example, Marc Rozner, M.D., Ph.D., and Dilip Thakar, M.D., both professors in the department, are skilled at handling the considerations of patients with pacemakers who undergo all types of cancer surgeries. Under Rozner's mentorship, three more anesthesiologists are preparing to take the International Board of Heart Rhythm Examiners' Certification of Competency in Cardiac Rhythm Device Therapy exam. Together these five will make up an anesthesiologist-run perioperative pacemaker service, the first of its kind.



Sharon Meredith works in the operating suites as an anesthesia support assistant.

Thao Bui, M.D., scans the board that tracks staffing and room capacity for the operating suites.

The department also has specialists in thoracic surgeries and in the Proton Therapy Center. Vivian Porche, M.D., is professor and medical director of anesthesia services at the center.

She's seen incredible growth in the number of anesthetic procedures administered outside the operating room. These include anesthetics administered during interventional radiology and proton therapy procedures, as well as screening exams, such as endoscopies and colonoscopies. These procedures now make up more than half of the department's cases.

"Our operation has grown so large," she says. "And our No. 1 goal is that the anesthetics we offer are safe — as safe as in any OR. We consider pain the fifth vital sign — along with blood pressure, pulse, respiratory rate and temperature. We don't want our patients to be in pain. They shouldn't have to 'tough it out.'"

Patient remembers experience

Two days after surgery, Salazar is recovering well in the hospital. All three of his children — son Nicolas and daughters Anali and Andrea — are now with him and his wife, Milagros.

He remembers being awake during surgery. He recalls speaking to Milagros and Anali by phone from the operating room, assuring them he was in good hands and in no pain.

Anali says that in the anesthetic assessment before surgery, Ferson asked her father whether he ever became angry or disruptive when he drank. This is relevant because those who have a history of being combative under the influence of alcohol might react the same way when awakened during surgery.

Salazar assured Ferson that he's happy and pleasant when he drinks.

Andrea, who arrived from Vancouver, B.C., after the surgery, laughs. "He's very nice — and very talkative," she says.

And how has her father been since his incredible experience?

"He's been hungry," Andrea says. "Oh! And he thinks he speaks better English now — after the surgery."

The family laughs and looks at Nicolas, who nods and smiles.

Three days a week, Vijaya Gottumukkala, M.D., "runs the board" for MD Anderson's 31 Main Building operating suites.

Cultivating a new field

Anesthesia techs step up to enhance contributions in the OR

By Julie A. Penne

As Jose "Joey" Herrera Jr. pursued his own aspirations as an anesthesiology technologist, he paved the way for those coming after him.

One of only four certified anesthesiology technologists in Houston and two at MD Anderson, Herrera works on the local and national fronts to enhance educational opportunities and push national standardized certification. His goal is to make anesthesiology support assistants acknowledged members of the anesthesia care team.

Herrera's initiative has broad support — from the 20 technicians and technologists who work with him to the leadership of MD Anderson's Division of Anesthesiology and Critical Care to the American Society of Anesthesiology Technologists and Technicians (ASATT).

Troubleshooters and monitors

Anesthesiology technologists and technicians support anesthesiologists by setting up and troubleshooting their equipment in the operating rooms and by helping monitor patients. They also work alongside anesthesiologists and CRNAs who sedate patients outside the operating room, such as pediatric patients at the Proton Therapy Center.

Constantly on the move, anesthesiology support assistants are among the first employees on the surgical floor every day.

"The most important aspect of our work is to earn the trust of the anesthesiologists and CRNAs and anticipate any need they or the patient may have," Herrera says. "We support them so they can focus on taking care of patients and keeping them safe during surgery."

Herrera returned to MD Anderson in January to manage the daily work of the technologists and technicians, secure educational and certification opportunities, and build a pipeline for the future.

It's been a long road since he came to MD Anderson in 1990 as a high school student, exploring health careers and working as a nursing assistant. But Herrera relishes the challenge of making the institution a model for the field that attracted him as a young man.

He is especially well suited for the job.

Besides 15-plus years of practical experience at two hospitals in the Texas Medical Center, Herrera was head of the anesthesiology technician program at Sanford-Brown College-Houston, an accredited school for allied health professions that awards associate's degrees. He developed the course work, arranged hospital rotations and worked closely with students on their career goals, job prospects and certifications.

As clinical manager of Anesthesia Services, Jose "Joey" Herrera Jr. manages and trains employees and makes sure the department's complex equipment is working — and where it's supposed to be.

Validation through certification

But even before he headed to MD Anderson to lead its program, there already were national changes afoot regarding training and certification.

Currently, there are two levels of certification. A person with two years of on-the-job experience or a recent graduate from an accredited anesthesia technology program can take the technician certification exam. After six months, the technician-certified anesthesia technologist can take the more involved technologist exam. But in 2015, the technician certification exam will no longer be offered, and technicians will only be able to sit for the technologist level certification exam if they have an associate's degree or higher in anesthesia technology.

Later this year, Herrera will become president of ASATT, the national organization for technicians and technologists, as the field prepares for the changeover. Until then, he will serve on the group's education committee, which oversees the national accreditation of programs.

"We're fortunate that our program is structured under the Division of Anesthesiology and Critical Care. Surprisingly, not every program in the country has that advantage," Herrera says. "MD Anderson is a great advocate for the field and already recognizes us as valued members of the anesthesia patient care team."

Picture This

Center takes aim at new cancer targets

By David Berkowitz

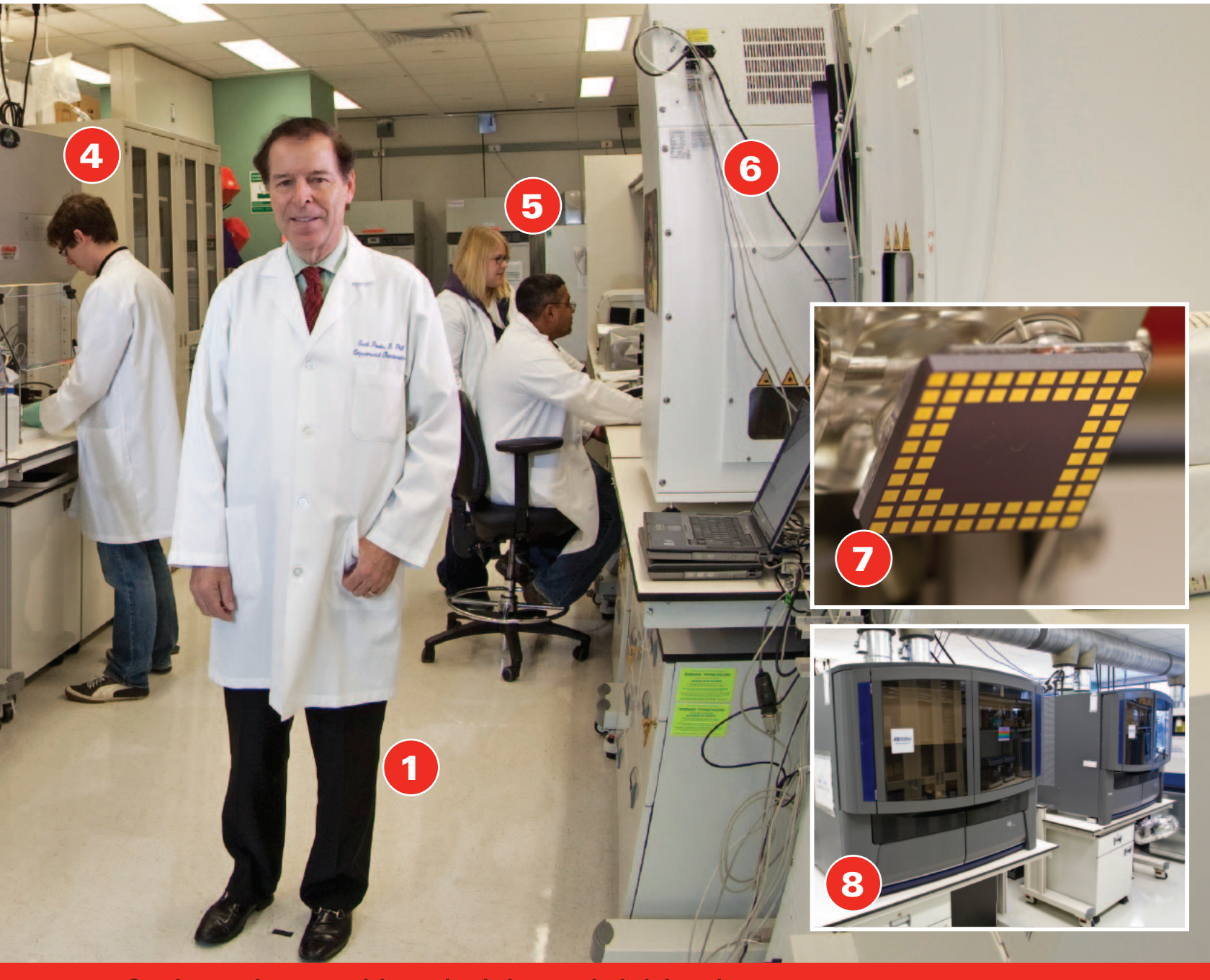
As MD Anderson accelerates the delivery of new cancer drug therapies from concept to patients in the clinic, the Center for Targeted Therapy is playing a critical role.

The center, directed by Garth Powis, D.Phil., allows MD Anderson researchers and clinicians to coordinate all stages of the drug discovery and development process. The goal is to design more effective and targeted drugs with less toxicity.

Pictured here is the Small Interference RNA (siRNA) Screening Service, one of several core programs within the center that's available to all MD Anderson investigators.

Directed by Geoffrey Bartholomeusz, Ph.D., assistant professor in the Department of Experimental Therapeutics, the service provides automated, high-throughput screening of cells using an siRNA library targeting more than 21,000 human genes.

This technology enables investigators to identify previously unknown modulators of cancer-inducing genes and signaling pathways that may be targeted to halt cancer's development and progression.



Our photographer captured the service during a particularly busy day:

1. Garth Powis, D.Phil.: In addition to his role as director of the Center for Targeted Therapy, he is professor and chair of the Department of Experimental Therapeutics, which administers the center.

2. Fluostar Omega microplate reader: Lakesla Iles, research assistant, operates this device, which determines absorbance, luminescence and fluorescence — three methods to verify results of a cell screen.

3. Biomek 3000: This robotic system accurately dispenses all controls into test plates for an assay.

4. Johnathon Rose: The research assistant works at the Biotek liquid dispenser, which allots small volumes of media, lipid reagents and cell suspensions into each well of an assay plate.

5. Heather Charron and Justin Jacob: The research assistants analyze data generated from an assay development plate.

6. Liconic incubators: This automated equipment enables incubation of cell cultures in very small volumes, with minimal evaporation in the outer wells of the media plate.

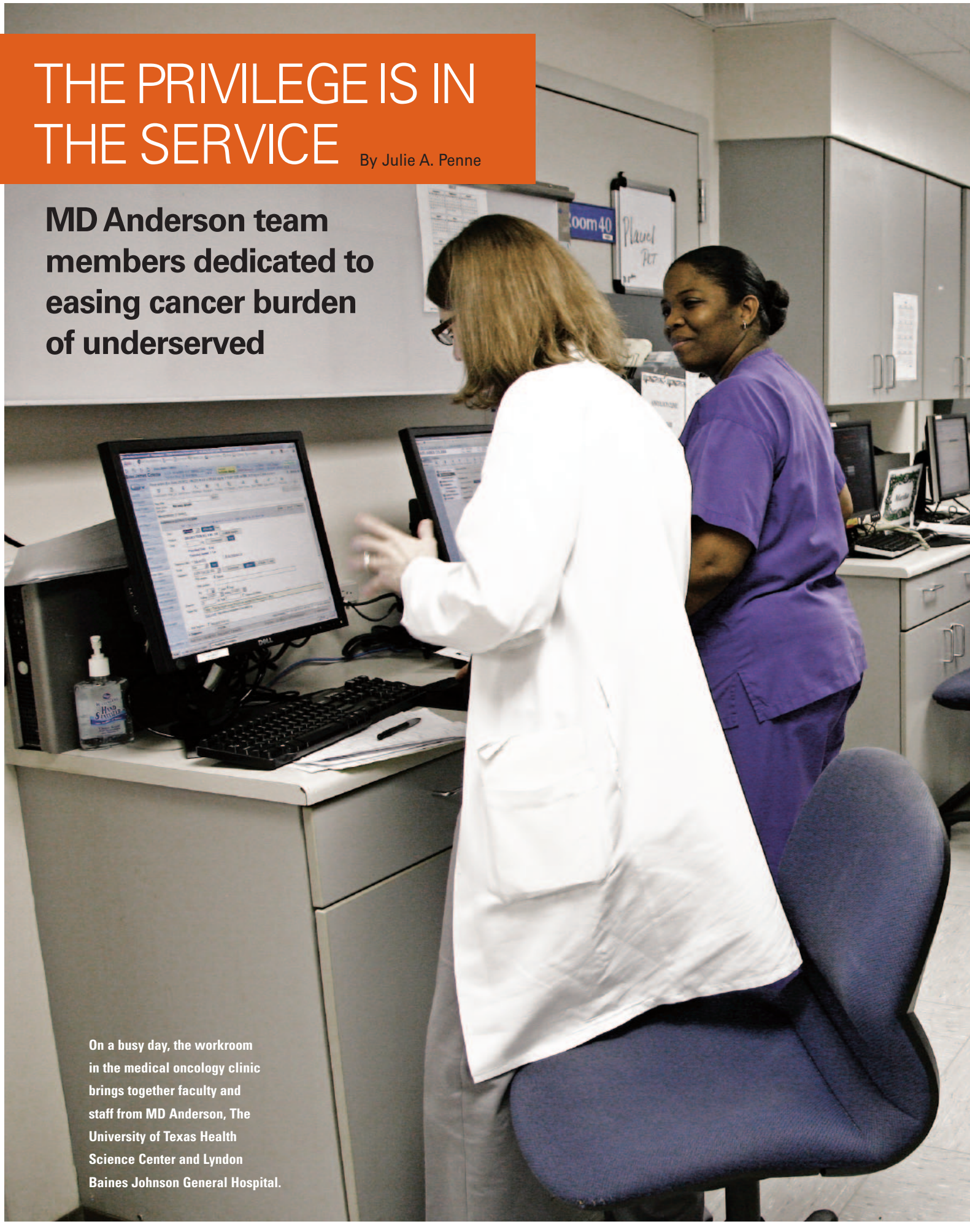
7. Semiconductor sequencing chip: The desktop Ion Torrent personal genome sequencer uses this chip and a hydrogen ion sensor to provide DNA sequencing of multiple genes in cancer pathways, whole gene sequencing and much more — within just a few hours. This is part of the center's Sequencing and Non-Coding RNA (ncRNA) Program.

8. Genetic Analysis System: This device, which also is part of the Sequencing and ncRNA Program, is an ultra-throughput DNA sequencing platform. The vents above the system help exhaust a tremendous amount of heat generated by the computer cluster/processors during a data collection run.

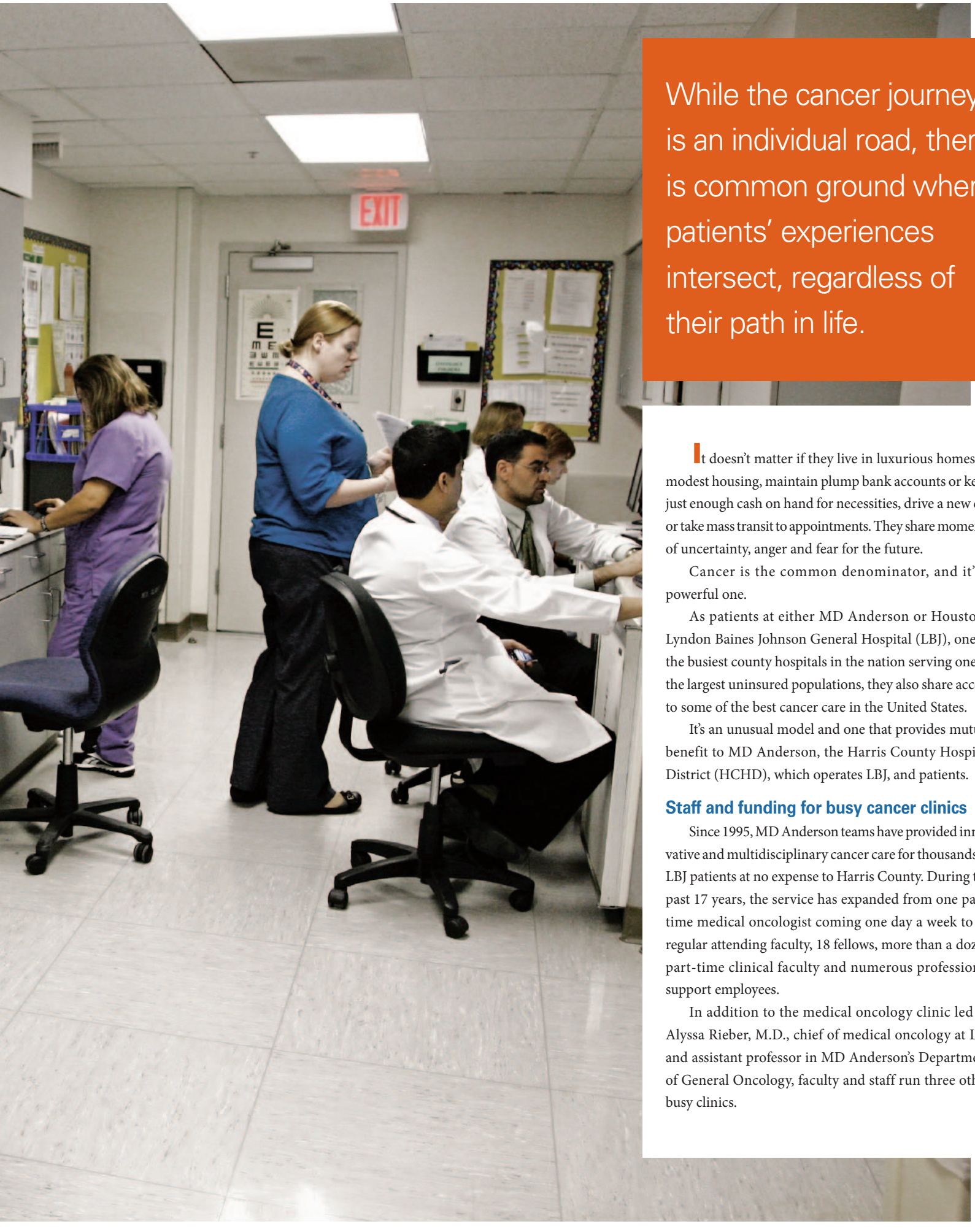
THE PRIVILEGE IS IN THE SERVICE

By Julie A. Penne

MD Anderson team members dedicated to easing cancer burden of underserved



On a busy day, the workroom in the medical oncology clinic brings together faculty and staff from MD Anderson, The University of Texas Health Science Center and Lyndon Baines Johnson General Hospital.



While the cancer journey is an individual road, there is common ground where patients' experiences intersect, regardless of their path in life.

It doesn't matter if they live in luxurious homes or modest housing, maintain plump bank accounts or keep just enough cash on hand for necessities, drive a new car or take mass transit to appointments. They share moments of uncertainty, anger and fear for the future.

Cancer is the common denominator, and it's a powerful one.

As patients at either MD Anderson or Houston's Lyndon Baines Johnson General Hospital (LBJ), one of the busiest county hospitals in the nation serving one of the largest uninsured populations, they also share access to some of the best cancer care in the United States.

It's an unusual model and one that provides mutual benefit to MD Anderson, the Harris County Hospital District (HCHD), which operates LBJ, and patients.

Staff and funding for busy cancer clinics

Since 1995, MD Anderson teams have provided innovative and multidisciplinary cancer care for thousands of LBJ patients at no expense to Harris County. During the past 17 years, the service has expanded from one part-time medical oncologist coming one day a week to 15 regular attending faculty, 18 fellows, more than a dozen part-time clinical faculty and numerous professional support employees.

In addition to the medical oncology clinic led by Alyssa Rieber, M.D., chief of medical oncology at LBJ and assistant professor in MD Anderson's Department of General Oncology, faculty and staff run three other busy clinics.

"YOU HAVE TO KNOW HOW TO WORK THE SYSTEM TO MAKE THINGS WORK FOR YOUR PATIENTS, AND YOU CAN'T BE AFRAID TO ASK FOR A FAVOR."

— Alyssa Rieber, M.D.

After his diagnosis, 29-year-old Houstonian Juan Hinojosa was referred to MD Anderson to have the tumor in his chest removed. Today, after surgery at MD Anderson and chemotherapy at LBJ, he is disease free.

Overseeing the gynecologic oncology service is Lois Ramondetta, M.D., professor in MD Anderson's Department of Gynecologic Oncology and Reproductive Medicine.

Steven Canfield, M.D., chief of urology at The University of Texas Health Science Center-Houston (UT Health) and assistant professor in MD Anderson's Department of Urology, leads the urologic oncology clinic.

Every day of the week, there is at least one MD Anderson team — often two teams — seeing patients in clinic, making rounds or performing surgery and other procedures at LBJ. Patients at LBJ may also participate in several clinical trials approved by MD Anderson's Institutional Review Board.

The financial bottom line is an annual contribution of more than $1.5 million in professional services provided to care for uninsured, underinsured and underserved patients through HCHD. As part of its community service tradition, MD Anderson pays the salaries and benefits of employees who support this work.

But for patients who have access to MD Anderson physicians and fellows, the bottom line is hope, dignity, specialized expertise and a motivated team that cares about every aspect of their lives.

It's all about the patients and collaboration

For 47-year-old Sonya Hicks, diagnosed with advanced rectal cancer in May 2011, it wasn't just her doctor's clinical experience that won her over. Her "angel team" were Patrick Archie, M.D., a third-year hematology and oncology fellow, and Curtis Wray, M.D., a surgical oncologist from UT Health. She says they were honest with her, taking the time to answer her questions and listen. Today, after radiation at Bayshore Medical Center, chemotherapy and surgery by Wray at LBJ, Hicks has no evidence of cancer.

"I've started my walk toward healing," says Hicks, who cut off one of her 200 cornrows every day to take control of her hair loss during chemotherapy. "After I was told I had cancer, I prayed, and God told me that He would take care of me. But I also knew that if I wanted to live, I had to get with the program. Dr. Archie and Dr. Wray helped me every step of the way."

Angela Martinez, a 31-year-old wife and mother of two children, says she knew she was with the right team after her first treatment. Diagnosed with lymphoma in her right thigh, Martinez says the lump, nearly the size of a cantaloupe, shrunk almost immediately after her first chemotherapy infusion.

Sonya Hicks says her oncologist, Patrick Archie, M.D., a third-year fellow, was honest and open with her and, for that, she will always remember him as one of her "angels."

After her chemotherapy, Martinez's oncologist, Siobhan Lynch, M.D., third-year hematology and oncology chief fellow, recommended radiation at MD Anderson. Every day for six weeks, Martinez drove herself and her two children on summer break to the Texas Medical Center (TMC) for treatment while her husband continued working.

"Dr. Lynch and the whole team were just awesome," Martinez says. "They were independent, strong and so supportive."

Martinez is one of many LBJ patients referred to MD Anderson's TMC campus for part or all of their treatment, including radiation treatment, specialized surgery, stem cell transplantation or care for complex or uncommon cancers such as leukemia and sarcoma.

LBJ an extension of MD Anderson's commitment

Lewis Foxhall, M.D., vice president for health policy at MD Anderson, says the LBJ program is a natural extension of the institution's commitment to the underserved and uninsured. While some Harris County residents with cancer need the specialized services that can only be provided at the cancer center, many uninsured or underinsured patients can be treated by MD Anderson teams at the LBJ facility.

This allows them to establish a "medical home," Foxhall says. Many patients have conditions, such as diabetes or high blood pressure, which require regular attention during and after their cancer treatment.

Third-year fellow Siobhan Lynch, M.D. (left), and Nishin Bhadkamkar, M.D., assistant professor in MD Anderson's Department of General Oncology and on the staff dedicated to LBJ, share notes on a patient's care.

"The team at LBJ truly is dedicated to providing the best cancer care with the resources available to them. They care a great deal about their patients and apply many aspects of multidisciplinary care practiced at MD Anderson's Texas Medical Center campus," Foxhall says. "We take a team approach to care and work hand in glove with our colleagues at UT Health and LBJ."

Fellows get case-based training

Among the beneficiaries of the program are the 18 medical oncology fellows who spend their second year and part of their third year seeing patients at LBJ in a general oncology setting. Working under dedicated MD Anderson faculty, the fellows see a wide range of patients, and they are responsible for all aspects of their care.

"Case-based training is vital to our fellows' experience. They have the advantage of seeing a patient through the entire spectrum of care, from initial diagnosis to treatment to follow up," Rieber says. "In the first year and a half of their fellowship on the main campus, fellows work closely with attending oncologists but they don't always fully connect with the patient. At LBJ, they're responsible for each patient's total care, though under supervision."

The educational component of the LBJ program is key, says Vicente Valero, M.D., the first faculty member assigned to LBJ and a primary force behind the growth of the clinical program. He continues to attend multidisciplinary breast cancer conferences and reminds fellows "to think about service."

"It's important that the fellows at LBJ realize that they, as doctors, may be the only advocate or caregiver that patients have," says Valero, professor in MD Anderson's Department of Breast Medical Oncology.

Valero is one of the dozen MD Anderson senior faculty regularly scheduled at LBJ to teach and supervise fellows. He brings a depth of experience with breast cancer just as Katherine Pisters, M.D., professor in MD Anderson's Department of Thoracic/Head and Neck Medical Oncology, contributes expertise in lung cancer. And Ralph Freedman, M.D., Ph.D., clinical professor in MD Anderson's Department of Gynecologic Oncology and Reproductive Medicine, contributes in cervical, uterine and ovarian cancers.

"WE SEE PATIENTS FROM ALL WALKS OF LIFE: PEOPLE WHO HAVE NOTHING OR THOSE WHO HAD MUCH AND LOST IT. WE CARE FOR THEM ALL EQUALLY AND CARE FOR THEM WELL."

— Siobhan Lynch, M.D.

Angela Martinez, a busy wife and mother of two children, now comes to LBJ only for follow-up appointments after treatment for lymphoma last year.

Collaborations sustain responsible health care

According to Harris County Hospital District President and CEO David Lopez, the MD Anderson practice at LBJ is a national model for public-private health care partnerships, providing seamless care for patients through collaboration.

"Our arrangement with MD Anderson offers so many benefits. Our patients get great care without going into the TMC. The taxpayers of Harris County keep their dollars focused on other needs. MD Anderson extends its research reach into the community. And many young oncologists get frontline experience," Lopez says.

"All of the physicians at LBJ, including pathologists, surgeons and radiologists, are working for the patient, not competing against each other," he continues. "It's similar to the TMC, which was built on competition, but its collaborations sustain it."

Joan Whorton said her diagnosis of breast cancer last year was frightening at first, but she has "found the good" that can come from such an experience.

"ONE OF MY GOALS, WHEN I FINISH TREATMENT, IS TO RETURN TO LBJ AS A VOLUNTEER AND GIVE BACK."

— Joan Whorton, patient

Lois Ramondetta, M.D. (far left), has a dedicated team of MD Anderson and LBJ nurses in the gynecology clinic. Clockwise left to right, they are Julieta Palencia, Elena Helm-Nyairo, Cynthia Panto, Jessica Gallegos and Kathy Doughtie.

MEET LOIS RAMONDETTA, M.D.

There is a thick scrapbook of photos near the LBJ desk of Lois Ramondetta, M.D., packed with wedding, vacation and baby photos, as well as pictures of smiling women, some bald from chemotherapy.

The photos remind Ramondetta of the hundreds of women who have walked into the gynecologic oncology clinic at LBJ — and into her life.

Every weekday, Ramondetta, professor in MD Anderson's Department of Gynecologic Oncology and Reproductive Medicine, is at LBJ and MD Anderson, driving the 20 minutes each way to round, perform surgery or see patients in clinic.

She started the gynecologic oncology clinic at LBJ in 2000 when she completed her MD Anderson fellowship. In addition to LBJ residents, she also works with Memorial Hermann residents and MD Anderson gynecologic oncology fellows. Two of her MD Anderson colleagues oversee the colposcopy service.

"Seeing patients at LBJ is not for everyone, and, for me, the key has been our great team," she says. "We've shared so much grief and happiness over the years."

Ramondetta sees every new patient diagnosed with a gynecologic cancer. In the last year, she's worked closely with an HCHD navigator to assist patients diagnosed with cervical cancer so they can maximize resources and services. In addition, she's earned her certificate in palliative care to better care for patients at the end of life and see to their families' many needs.

"Working at LBJ is very rewarding. Our patients are grateful for all that you do as a physician or advocate," she says. "We make an impact here. There are lots of smiles and hugs."

MEET CYNTHIA GREENE, R.N.

A great nurse is vital in a cancer patient's journey.

For the MD Anderson team, Cynthia Greene, clinical nurse, has been a valued constant since 1995 when the new oncology service was launched. Employed by HCHD, she has always been in infusion therapy, giving chemotherapy and other treatments. She has worked with every MD Anderson fellow, faculty member and employee who has cared for cancer patients at LBJ.

A native of Mississippi, Greene earned a history degree from Tufts University and then decided to pursue a career in nursing, instead of teaching. She graduated as a licensed vocational nurse in 1977 and, 10 years later, received her bachelor's degree in nursing from The University of Texas School of Nursing. Part of her education included an MD Anderson rotation.

"I can identify with the patients I care for, and I can relate to their needs," she says. "We're challenged in some ways, but our patients get some of the best cancer care in the world."

When Greene began working in the Infusion Center at LBJ, she was the only nurse caring for patients in a cramped space of three converted inpatient rooms with three beds and six chairs. Last October, the new center opened with 20 chairs, each surrounded by pastel privacy curtains. The sage green walls are accented with colorful art and soft lighting.

"I love this new center for our patients," she says. "It's what I've always wanted for them. It's what they deserve."

MEET ALYSSA RIEBER, M.D.

LBJ's Chief of Medical Oncology Alyssa Rieber, M.D., rounds with fellows from MD Anderson and residents from UT Health, checking on cancer patients who are hospitalized with a variety of complications and side effects.

With every patient, she asks a number of questions: "How are you feeling?" "Do you have pain?" "What medications are you taking?" "How long have you been on treatment?" "Did you have your chest X-ray?" "Do you feel ready to go home?"

The clinical questions immediately have follow-up questions that a social worker might ask: "Who do you live with?" "Who is your caregiver?" "Do you have transportation?" "Who's caring for your children?" "Are you on disability?"

For Rieber, who completed her fellowship at LBJ in 2007 and stayed on as a dedicated faculty member, both sets of questions are equally important.

"You have to want to be at LBJ and advocate for patients who really need you. Everything you do for them is magnified in importance," she says. "It's vital to ask questions that you may not learn in medical school, but that you learn on the job here. You have to know the patient's situation. If you order the best diagnostic test or radiation treatment in the world and they don't have transportation, it's not going to help. You have to find what works best for their disease — and their situation."

Rieber's dedication to cancer patients began in her first year of medical school when she was diagnosed with Hodgkin's lymphoma. As a cancer survivor and senior member of the oncology team, Rieber runs the survivorship clinic once a week, in addition to her other duties. The survivorship clinic at LBJ is the first of its kind in a county hospital.

Behind the scenes

By Katrina Burton

A closer look at cancer screening guidelines

If the release of the U.S. Preventive Services Task Force (USPSTF) recommendations on screening has taught us anything, it's that not all cancer screening guidelines are created equal.

Age, gender, lifestyle and even genetics play a role in a person's need to be screened for cancer. Considering the different factors that can contribute to a person's risk of developing cancer, these guidelines are not only important, but also necessary.

In 2009, when the U.S. Preventive Services Task Force released recommendations that routine breast cancer screenings should start at age 50 instead of 40 — and women should then only have biennial screening mammograms until age 74 — a media storm emerged. This included not only outcries from clinicians and health care providers across the country, but also from patients, survivors and family members.

Just last year, the same task force sought public input on a draft document that recommended against the use of prostate-specific antigen (PSA) tests in men to detect prostate cancer, claiming it may do more harm than good. Although the recommendation was targeted toward healthy men, many patient advocates and some health care providers thought differently, and there was another public outcry.

Evidence-based guidelines

Therese Bevers, M.D., professor in MD Anderson's Department of Clinical Cancer Prevention and medical director of its Cancer Prevention Center, knows only too well the careful thought that goes into developing screening guidelines — and the influence it can have on a person's decision to be screened. Bevers is at the helm of MD Anderson's clinical workgroups that develop, approve and implement the institution's cancer screening guidelines or "algorithms."

"We develop our own institutional algorithms according to best practices, and the guidelines are evidence-based," Bevers says. "Our guidelines do not always mirror other institutional and national task force recommendations."

Bevers, who emphasizes that early detection is the key to fighting breast cancer, stands behind MD Anderson's breast cancer screening guidelines that recommend annual mammograms for women at average risk, starting at age 40.

Managing care through clinical effectiveness

Algorithms are developed based on best practices, using the available evidence in combination with consensus of expert opinion. Bevers works with the Department of Clinical Effectiveness, whose main goal is to enhance the delivery of safe, effective and consistent health care to patients across the continuum of care.

The department focuses on the development, maintenance and evaluation of evidence-based patient care management tools for cancer treatment, as well as tools for cancer screening, clinical management and survivorship.

"All patient care management tools are developed, reviewed and approved by the medical staff," says Yvette DeJesus, director of the department. "It's our way of ensuring that checks and balances are in place to provide the best possible outcomes for our patients and potential patients."

United we stand

As the physician champion of the various clinical workgroups that develop the cancer screening algorithms, Bevers' involvement is multidimensional. She follows each one through its process.

Step one: The Clinical Effectiveness Subcommittee creates a workgroup of multidisciplinary experts in the disease whose algorithm is being developed.

Step two: The Clinical Effectiveness Subcommittee reviews and recommends the algorithm, then submits it to the Medical Practice Committee for approval.

Step three: The Executive Committee of the Medical Staff gives final approval, which means the algorithm represents best practices at MD Anderson.

Step four: The Department of Clinical Effectiveness ensures all algorithms, including cancer screening, are reviewed annually.

Re-examining the old and ushering in the new

MD Anderson's focus on cancer prevention for the past 15 years has led to the development of algorithms for a variety of cancers. Last year, new screening algorithms were developed for lung, skin, ovarian and endometrial cancers. This year, in addition to updating the previously developed cancer screening algorithms, the institution plans to unveil new screening algorithms for prostate and liver cancers.

"Since every cancer is different and people are at different levels of risk, cancer screening guidelines offer guidance for people to make the best decisions about their health," Bevers says.

Yvette DeJesus (left) and Therese Bevers, M.D., collaborate with committees of experts to develop cancer screening guidelines for a variety of cancers.

Need for endometrial screening guidelines

With the release of the new cancer prevention screening algorithms, Jubilee Brown, M.D., associate professor in the Department of Gynecologic Oncology and Reproductive Medicine, is anticipating an opportunity to educate the public about endometrial cancer.

Brown notes that more than 47,000 new cases of endometrial cancer are expected in the United States this year.

"Currently, there's no benefit to biopsy or transvaginal ultrasounds for women at average risk," Brown says. "It's important for us to educate women on the risk factors and on how to recognize the early warning signs of this cancer."

Obesity is the number one risk factor for developing endometrial cancer. Early warning signs can include abnormal bleeding and vaginal discharge. Brown encourages women with symptoms to see a doctor as soon as possible.

Clinical nutrition

The personalized approach

By Sandi Stromberg

Mohammad Tekrouri and Carol Frankmann are proud of the new kitchen, which became functional in March and is devoted strictly to room service for inpatients and their caregivers.

Imagine ordering your hospital meals from a special menu and having them delivered by hotel-trained wait staff. Or, as a caregiver, eating well while supporting a family member.

Imagine a dietitian helping you plan what to eat while you're in cancer treatment, someone who cares that you're getting the nutrition you need.

At MD Anderson, you don't have to imagine.

"Nutrition is an essential part of every patient's care. And our goal is to provide the best nutrition possible," says Carol Frankmann, director of the Department of Clinical Nutrition. "Our specialized dietitians and hotel-style room service are two more ways that MD Anderson provides patients with personalized care."

On the front line

Specialized in oncology-focused nutrition, MD Anderson's clinical dietitians work closely with a patient's medical team, assessing nutritional status and collaborating with the physician and team to implement personalized nutrition care.

They are stationed in inpatient units, outpatient treatment clinics and at the four regional care centers located in suburban Houston.

Through MD Anderson's telehealth facilities, they can take part in educational meetings to keep current in the field.

"Depending on which group of patients we work with, we need a totally different set of clinical skills," says Julie Hershorn, senior clinical dietitian in the department. For 12 years, she worked with patients in bone marrow transplantation. Today, as she has for 14 years, she works with head and neck cancer patients.

"As an example of the differences," she says, "patients with leukemia, lymphoma or myeloma — or those who have had a bone marrow transplant — experience drug-related side effects, such as nausea, vomiting and diarrhea. We provide special diets for them. Some patients may need a neutropenic diet, no raw fruits and vegetables, because of low white blood cell counts.

"However, head and neck patients sometimes need texture modifications, such as pureed and chopped foods and thickened liquids, because of aspiration risks. Also, for those who use a feeding tube, we provide training for taking care of the tubes and tube feedings."

For Hershorn, the reward of her job is having a direct effect on patients and their care. "I get to interview patients and give them what they need, then help them manage to move on and heal."

With other allied health staff, she also helps educate new fellows and residents about nutrition when they come each year.

Julie Hershorn, a senior clinical dietitian, helps patients with head and neck cancers who need feeding tubes.

At your service

In 1998, Frankmann and her staff worked with nurses, volunteers and patient advocates, as well as representatives from three nursing units, to pilot a room service concept. The idea was to imitate what works in an upscale hotel. From the pilot, they developed a model that they took institution-wide in January 2000.

"I came to MD Anderson in late 1999," says Mohammad Tekrouri, associate director of Room Service. "I had been at the Ritz-Carlton and helped our department implement the program, as well as hire and train the team."

"Menus are built to meet the needs of the patient at the time they want to eat," Frankmann says. "That's the best chance to provide good nutrition. We also are sensitive to cultural and religious traditions around dietary practices. For example, we have no-pork, kosher, vegetarian and vegan menu options."

Dietetic specialists ensure the menu items are appropriate for restricted diets. Wait staff orient patients to room service and present a menu that is specific to each patient's diet, along with a guest menu for family and caregivers. Orders are called into a center with trained and scripted employees who can help patients make choices, especially when they have side effects, such as mouth sores or no appetite.

When the chef tries new recipes, Room Service books a tasting session with nurses and patients. "Patient feedback is priceless when building menus and adding special items," Tekrouri says.

"We serve more than 1,500 meals a day, and it's all teamwork. Each employee contributes an essential part to make the process flow smoothly so patients receive the fresh, appealing food they ordered within 45 minutes or less, anytime between 6:30 a.m. and 9:30 p.m.," he says.

Expertise, research, innovative practices

"We have a superb team — an incredible team," Frankmann says. "Our clinical dietitians and Room Service employees are knowledgeable and passionate about caring for our patients. We're committed to promoting health and healing through personalized nutrition care. And we all share the same vision: Through excellence and caring for others, we will lead the world in evidence-based, oncology-focused nutrition care."

CONQUEST

Scan this QR code to see how MD Anderson's Room Service provides hotel-quality food and service, or visit www.mdanderson.org/conquest.

Cancer Briefings

TRIBUTE TO MD ANDERSON'S THIRD FULL-TIME PRESIDENT

A major building on the MD Anderson campus now bears the name of John Mendelsohn, M.D., to honor his 15-year leadership of the nation's largest cancer center.

A pioneer in the field of personalized cancer therapy, Mendelsohn served as the institution's third full-time president from 1996 to 2011. During his tenure, MD Anderson marked a number of milestones, including the launch and early completion of a $1.2 billion fundraising campaign, the most ambitious in the institution's history.

Following a six-month sabbatical at Harvard University and the Massachusetts Institute of Technology to re-immerse in research, Mendelsohn returned to MD Anderson in March as co-director of the Sheikh Khalifa Bin Zayed Al Nahyan Institute for Personalized Cancer Therapy. In this position, he continues the clinical and translational research he started more than 30 years ago.

In addition, he joins Rice University's James A. Baker III Institute for Public Policy as the L.E. and Virginia Simmons senior fellow in health and technology policy.

One of the preeminent leaders in cancer medicine

"One of my greatest joys as president of this institution has been getting to know and work with the unsurpassed faculty, staff and volunteers who contribute to the MD Anderson mission. To be honored in this way is indeed humbling and gratifying," Mendelsohn says.

The John Mendelsohn Faculty Center, 1400 Holcombe Blvd., opened in fall 2000 as the institution's first building dedicated to serving faculty. Construction of the 13-story, 225,000-square-foot professional office building allowed the institution to relocate faculty from existing clinics and expand exam and treatment room capacity.

Today, it provides space for nearly 1,500 employees representing more than 30 departments, plus ancillary and support functions.

Mendelsohn led MD Anderson as it quadrupled in budget and tripled in space. The number of employees and patients served doubled during his presidency, and private philanthropy increased almost tenfold.

"John Mendelsohn is one of the preeminent leaders in modern cancer medicine," says Ronald DePinho, M.D., president of MD Anderson. "It's fitting that the John Mendelsohn Faculty Center bears his name in honor of the countless contributions he has made not only to our institution, but also to the field of oncology and, ultimately, to cancer patients and their families everywhere."

A 15-MINUTE INVESTMENT IN A LONGER LIFE

Health benefits of physical activity

Taiwanese who exercised for 15 minutes a day, or 92 minutes per week, extended their expected lifespan by three years compared to people who were inactive, according to a recent finding.

"Exercising at very light levels reduced mortality from all causes by 14%," says study senior author Xifeng Wu, M.D., Ph.D., professor and chair of MD Anderson's Department of Epidemiology. "The benefits of exercise appear to be significant, even without reaching the recommended 150 minutes or more per week, recommended by the Physical Activity Guidelines for Americans."

Lead author, Chi-Pang Wen, M.D., Dr.P.H., of the National Health Research Institutes of Taiwan, and colleagues also found that a person's risk of death from all causes decreased by 4% for every additional 15 minutes of exercise up to 100 minutes a day during the course of the study.

"These benefits were applicable to all age groups, both sexes and those with cardiovascular disease risk," the authors note.

Exercise key to health

If inactive people in Taiwan were to do low-volume daily exercise, one in six deaths could be postponed, the authors report. It would be an estimated reduction in mortality similar to that from a successful tobacco control program.

The prospective observational study involved 416,175 Taiwanese who participated in a standard medical screening program run by MJ Health Management Institution, a health screening company, between 1996 and 2008. Participants were followed for an average of eight years.

For the exercise study, participants completed a questionnaire covering their medical history and lifestyle information. They characterized their weekly physical activity for the previous month by intensity — light (e.g., walking), moderate (e.g., brisk walking), vigorous (e.g., jogging) or high vigorous (e.g., running) — and length of time engaged in each activity category.

Based on the intensity and duration of their exercise, the participants were grouped into five categories: inactive, low, medium, high or very high — with 54% of all participants in the inactive category. Researchers calculated mortality risk and life expectancy for each group. To account for physical activity at work, participants were also classified into four different activity levels, ranging from sedentary to hard physical labor.

Thirteen other variables were analyzed to control for possible confounding effects: age, sex, education level, physical labor at work, smoking, alcohol use, fasting blood sugar, systolic blood pressure, total cholesterol, body mass index, diabetes, hypertension and history of cancer.

Those who engaged in low-volume exercise had lower death rates than inactive people regardless of age, gender, health status, tobacco use, alcohol consumption or cardiovascular disease risk.

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Moving Forward: Gus, Bob and Larry

Connection becomes a circle of comfort

How patients help each other

By Mary Jane Schier

Gus Gutman, Bob Kukla and Larry Link probably would not have met except for being blindsided by bladder cancer.

When diagnosed, each was 60-ish, enjoying successful careers and, otherwise, in excellent health. Today, all three are grateful survivors who through Anderson Network have extended the circle of comfort they received when confronted with difficult treatment choices.

"Hearing I had bladder cancer in 1995 was a big shock," recalls Gutman, a Holocaust survivor whose parents fled the Nazis in their native Germany when he was 4 years old.

Gutman, his wife Greta and their three children lived in Austin, Texas, where he was an organic chemist for the 3M Company and known for developing an anti-static tape for which he holds the patent.

"I was trying to comprehend losing my bladder and getting a urinary diversion bag when a nurse urged me to go to MD Anderson," he says.

After his treatment team outlined options, Gutman decided on pre-operative chemotherapy and surgery, in which his bladder was removed and a neobladder or internal urine collection pouch was made from part of his lower intestine. More chemotherapy followed.

"When I read about Anderson Network, I called and offered to talk about my experience. It was a way to give back for my wonderful care," says Gutman, who continues to share hope from his home in Lilydale, Minn.

Gus helps Bob

Petroleum engineer Bob Kukla relocated his family 14 times during 37 years with the Marathon Oil Corporation. In 2003, two weeks after retiring as a vice president, he learned he had a rare form of bladder cancer.

"We had moved to the Houston area in 1997, so I wanted to go to MD Anderson," states Kukla, who had four rounds of chemotherapy prior to surgery. When told he would need a urinary diversion, he asked Anderson Network for names of survivors who had undergone different procedures. One of them was Gutman.

Treated at MD Anderson for bladder cancer in 1995, Gus Gutman continues to help other patients from his home in Minnesota through Anderson Network's Telephone Support Line.

Kukla remembers that "Gus helped me understand how the neo-bladder worked, how it felt, how he had returned to normal activities."

Before leaving MD Anderson after surgery, Kukla was walking a mile a day and within a few months was back on the golf course and planning hunting and fishing trips. A high priority was offering to talk with new patients who contacted Anderson Network. He quickly became a busy telephone volunteer.

"Being a Networker is very fulfilling. I understand how scary a cancer diagnosis can be. I want to help others feel comfortable with their decisions so they'll have no regrets," he says.

Kukla and his wife Unna, who have three children and 10 grandchildren, are active in their church and enjoy traveling. His philosophy: "Enjoy each day."

Gus and Bob help Larry

Larry Link was the picture of good health in 2000. His advertising business was flourishing. He and his wife, Carol, had raised three children and were looking forward to grandparenting.

"I was devastated when the doctor said I had bladder cancer," relates Link, who came to MD Anderson to explore his treatment options.

In 2007, Larry Link found comfort and reassurance from Bob Kukla and Gus Gutman when he considered a urinary diversion bag.

Janice Bordovsky, a cancer survivor and volunteer in Anderson Network's Mays Clinic Hospitality Center, visits with Bob Kukla, who was matched with Gus Gutman when he was diagnosed with bladder cancer.

Since he had early stage disease, Link qualified for a clinical trial that was evaluating the immunotherapeutic agent BCG (Bacillus Calmette-Guerin). The BCG infusions worked for a while, but after several recurrences he faced losing his bladder.

Link already was an Anderson Network member who had talked with others for whom BCG was an option. Now, he needed to know about urinary diversion methods. Gutman and Kukla were among the Networkers he spoke with about the internal pouch.

"They helped reassure me," says Link, who had his bladder removed and received a neobladder just before Thanksgiving 2007. He soon resumed swimming, golfing and fun family and church activities.

Link recently sold the last of several companies and bought a hay farm near his home in Granbury, Texas.

"The hay business isn't too good due to last year's severe drought, but I enjoy working a few hours almost every day on the farm," Link says, adding, "And I'm always ready to talk to anyone about bladder cancer and surviving it."

Anderson Network: Patient-to-patient caring

Anderson Network recently celebrated its 25th anniversary of providing hope and practical help to cancer patients and caregivers around the globe.

As part of MD Anderson's Department of Volunteer Services, Anderson Network is best known for its successful telephone support service that has matched more than 25,000 patients and loved ones with survivors of similar diseases.

Other programs include:

- two onsite hospitality centers staffed by Network volunteers who answer patient and caregiver questions and give out refreshments along with educational materials and survivor resources;
- Day Away trips, an adult patient/survivor camp and the Cancer180 program for young adult patients and survivors;
- an annual patient/caregiver survivorship conference; and
- weekly programs to help patients live better with cancer and other programs designed for caregivers.

The Anderson Network can be reached at 713-792-2553, toll free at 800-345-6324 or at www.mdanderson.org/andersonnetwork.

Everyone wants a voice

New life for damaged vocal cords

By Sandi Stromberg

Surviving cancer is every patient's goal. But cancer and its treatments can cause debilitating side effects that affect a person's quality of life. That's why doctors and staff in MD Anderson's Voice Center are working to restore voice to patients who have lost the ability to produce sound because of cancer or its treatments.

"What makes us distinctly human is our ability to communicate with one another verbally," says Michael Kupferman, M.D., assistant professor in the Department of Head and Neck Surgery. "Due to the effects of their cancers and certain treatments, patients are often left with a weak voice or severe hoarseness. They often can't communicate on the telephone or have a conversation in a restaurant. In some situations, they may not be able to resume their occupations."

Damage to the larynx (voice box) can occur from either the tumor or treatments, such as radiation or surgery, especially among patients with cancers that involve the thyroid, lung, esophagus, or head and neck. This is often due to injury to the nerve that controls movements of the larynx.

Back to normal communication

"Most patients will initially complain of a soft, breathy voice. They may also report coughing when they eat or drink that can put them at risk for pneumonia," says Jan Lewin, Ph.D., professor in the Department of Head and Neck Surgery and chief of the Section of Speech Pathology and Audiology.

"This is because the vocal folds, the two little muscles within the larynx, cannot close to make sound, nor can they prevent food and liquid from falling into the airway."

Kupferman and Lewin introduced the Voice Center program to re-establish the function of the larynx. Now other doctors within the department also participate.

Patients may be offered minimally invasive interventions, which include a vocal fold injection that can be performed while the patient is in the clinic. This procedure provides a temporary improvement in vocal fold function. When the damage is permanent, patients may elect to undergo a simple surgical procedure for permanent correction.

In either case, the effects are immediate, and after only a few days of voice rest, patients can start speaking without restrictions. The results are generally excellent, and most patients report a return to normal communication and activities without difficulty.

Michael Kupferman, M.D. (left), and Jan Lewin, Ph.D., perform a minimally invasive procedure to restore the voice of Philip Goodwin, a patient who travels from his home in Florida for treatment of his esophageal cancer.

The ability to speak and be heard ranks high on the scale when patients assess their quality of life. The Voice Center is dedicated to helping them retain or regain that important function.

Editor's Note: At MD Anderson, there are many other programs that address a patient's quality of life. Among them are a swallowing function laboratory, speech pathology and audiology, services that will be covered in future issues of Conquest as "Signs of Hope."

Scan this QR code to learn more about this minimally invasive procedure to restore a patient's vocal function, or visit www.mdanderson.org/conquest.

LOCATIONS

In addition to MD Anderson's main campus in the Texas Medical Center in Houston and two research campuses in Bastrop County, Texas, the institution has developed a number of local, national and international locations.

REGIONAL CARE CENTERS

Greater Houston area: Bay Area (Nassau Bay), Katy, Sugar Land, The Woodlands

EXTENSIONS

Banner MD Anderson Cancer Center (Gilbert, Ariz.)

MD Anderson Radiation Treatment Center at American Hospital (Istanbul, Turkey)

MD Anderson Radiation Treatment Center at Presbyterian Kaseman Hospital (Albuquerque, N.M.)

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For information on patient services at MD Anderson, call askMDAnderson at 1-877-MDA-6789, or log on to www.mdanderson.org/ask.

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