Frontiers (Summer 2009) - Surpassing Expectations: The Innovative Surgery Advancements of an Academic Medical Center

University of Tennessee Medical Center
University of Tennessee Graduate School of Medicine

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Recommended Citation
University of Tennessee Medical Center and University of Tennessee Graduate School of Medicine, "Frontiers (Summer 2009) - Surpassing Expectations: The Innovative Surgery Advancements of an Academic Medical Center" (2009). Frontiers Magazine.
https://trace.tennessee.edu/utgradmed_frontiers/8

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Surpassing Expectations
The Innovative Surgery Advancements of an Academic Medical Center

For Alumni and Friends
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About the cover
   This issue’s cover art depicts
   the University of Tennessee
   Medical Center’s commitment to
   innovation. The green apple is
   symbolic of the traditional care
   patients have come to expect.
   The orange symbolizes the
   exciting new technologies and
   procedures. Together, they
   surpass expectations.

The Healing Garden  (opposite page)
   at the University of Tennessee Medical Center —
   a sanctuary for patients and their families and
caregivers — held its grand opening on June 7.
Dear Alumni and Friends,

Beginning with our earliest days in 1956, surgery and surgical subspecialties have been a focus of emphasis and excellence at the University of Tennessee Medical Center. We could use this entire issue of Frontiers just to talk about the many skilled surgeons who have set such very high standards of surgical care at our medical center and have contributed so much to the outstanding reputation for surgical patient care.

Today that tradition of excellence continues in all of our surgical programs. From the most basic general surgeries to the most complicated trauma, orthopedic, cardiothoracic, oncology, vascular, transplant, and neurological surgeries to the most advanced robotic and minimally invasive surgeries, our physicians and surgical programs are recognized throughout the community for the expertise with which they treat our patients every day. In addition to this outstanding patient care, the University of Tennessee Medical Center continues to lead the way in training the next generation of surgeons and surgical technicians. The establishment of our Medical Simulation Center provides our surgeons with opportunities not only to hone their skills but also to train surgical residents in one of the region’s finest centers.

Whether a surgical procedure is planned or comes unexpectedly, it’s comforting for all of us to know that the long, respected history of surgical excellence at the University of Tennessee Medical Center continues today and will be carried on into the future.

Sincerely,

Joseph R. Landsman, Jr.
President and Chief Executive Officer
University Health System, Inc.

Welcome to this edition of Frontiers entitled “Surpassing Expectations”. As an Academic Medical Center the University of Tennessee exceeds expectations on several fronts and in this issue we focus on surgery. Reading these articles you will quickly realize that (a) we have some of the best surgeons available, (b) we are unique in several of the procedures offered to patients in this region, and (c) both of these attributes contribute to our expertise in educating our future surgeons.

While the inside back cover highlights many of our surgeons and anesthesiologists, know that we approach surgery from a team perspective with several additional healthcare professionals ranging from nursing staff to scrub technicians. It is this team method that allows our surgeons to maximize their excellent skills providing our patients positive outcomes. Similarly, our surgeons use state-of-the-art technology to offer highly specialized surgery unique to our region such as CyberKnife® Stereotactic Radiosurgery System and the da Vinci Surgical System. We are proud that these same surgeons are our faculty educating our residents in these same skills so they provide excellent care to their patients in East Tennessee (see article on rural surgery) or elsewhere when they go into practice.

Sincerely,

James J. Neutens, PhD
Dean
UT Graduate School of Medicine
Where do you go for surgery when you want the latest technology and medical innovations, combined with clinical expertise and the compassion of dedicated healthcare professionals? The answer – the University of Tennessee Medical Center. The very thought of surgery can be overwhelming, and when you're facing the real thing it's comforting to know that there is a place where surgical teams have the capability to provide skilled, specialized care 24 hours a day.

The University of Tennessee Medical Center's Department of Surgery has a long-standing history of excellence in patient care, education, and research. In addition, the medical center is a designated Level I Trauma Center and as an academic hospital is actively engaged in the training of physicians, nurses, and surgical technicians.

The Department of Surgery faculty prepares the surgeons of tomorrow. Its members are dedicated to the three fold mission of patient care, research,
and surgical education. They work at the medical center because of their dedication to training future surgeons while continuing their own education and research—a process that leads to improved treatments, better outcomes, and new discoveries. Over the years, more than 120 residents and fellows have been trained in surgery, benefiting from the expertise of mentors who are in tune with the very latest developments in surgical science.

Surgical nurses and technologists also complete specialty training at the medical center and develop the skills required to support the use of new techniques and procedures. The medical center has the area’s only perioperative residency program, through which nurses can acquire operating room expertise. It consists of classroom and clinical rotations that provide training on some of the most specialized equipment and comprehensive procedures available. Trained pre-operative and post-operative staff work in a closely coordinated system to meet the special needs of all patients before and after surgery. This strong culture of teamwork extends beyond surgical treatment, personalizing each patient’s experience while delivering high quality patient care.

The breadth of services offered at the medical center spans all areas of surgical care. These include, among others, trauma, critical care, general surgery, vascular, transplant, endocrine, surgical oncology, hepatobiliary and pancreatic, colorectal, skin and melanoma, sarcoma, head and neck, ear, nose, and throat, neurosurgery, ophthalmology, cardiothoracic, minimally invasive, robotic, bariatric, orthopedic, urology, gynecology, plastic, oral maxillofacial, and pediatric.

For patients, one major advantage of being at an academic medical center is the on-site availability of a physician 24 hours a day every day. There’s never a time when an in-house physician is not on hand to fulfill a patient’s needs. This is a key benefit, and one that results in improved outcomes and patient care.

As a designated Level I Trauma Center serving East Tennessee, all surgical care must be of particularly high quality. The expertise of the multidisciplinary teams serves not only patients who require emergency or trauma treatment but also anyone who’s looking for the best in surgical care. All day every day, the medical center’s healthcare professionals are ready to provide the excellent surgery their patients need.

“To be a Level I Trauma Center and be available the way we are,” says Blaine Enderson, MD, a professor of surgery and chief of the trauma and critical-care division, “We almost have to be an academic medical center. To be a trauma center, you have to do education and research. Having people in the hospital on call, having enough people to respond, the makeup of the whole team, doing the research needed, all that fits into being a Level I Trauma Center. There are very few Level I Trauma Centers that aren’t academic centers.”

The medical center’s professionals are performing more groundbreaking procedures all the time. Surgical oncologist James M. Lewis, MD, brought a cutting-edge technique to the medical center when he arrived in September of last year. Using innovative isolated-limb infusion on melanoma and sarcoma patients with tumors of the leg or arm, he can save limbs from amputation by delivering high doses of chemotherapy directly to the limbs, without having to subject the patients’ entire bodies to the side effects of systemic chemotherapy.

Chris West, RN (right), demonstrates the proper use of surgical supplies to nursing residents.
Organ Transplants – Saving One Life At A Time

Within the scope of surgery, the University of Tennessee Medical Center saves lives by performing organ transplants. Transplant services began in 1985, and the first kidney transplant was done by Mitchell Goldman, MD. Since that time, the medical center’s surgeons have performed a total of 900 transplants. The 1,000th transplant will be an important milestone as the program continues to grow, partly through an increase in transplants of organs from living donors.

Chronic kidney disease is defined as having some type of kidney abnormality or decreased kidney function for three months or longer. In the United States, the leading cause of kidney failure is diabetes followed by high blood pressure. The Center for Transplant Services at the medical center provides kidney, pancreas, and simultaneous kidney-pancreas transplants as a treatment for kidney failure and diabetes.

Last year the Health Resources and Services Administration, an agency of the U.S. Department of Health and Human Services, recognized the medical center by awarding it a National Medal of Honor for Organ Donation. One of just four Tennessee hospitals to receive the award, the medical center was honored for its work in increasing organ-donation rates.

Building on previous successes and achievements, the physicians and staff at the Center for Transplant Services continue to deploy the latest treatments and surgical procedures to help their patients regain a healthy life.

“It’s a standard of therapy,” Lewis says, “but it’s just not that common around the country. We’re the first to do it in Tennessee.”

As the medical center grows, the Department of Surgery continues to seek out innovative ways to prepare tomorrow’s surgeons. A state of the art simulation center, which opened in 2008, allows faculty, resident staff, and clinical staff to practice new techniques as well as refine technologies and methods currently used in surgery.

“Academians must keep up with the most recent evidence,” says Gary Scott, vice president of perioperative services. “They educate, they supervise, and they attend conferences locally, across the country, and around the world to learn new skills or participate in research and the development of new techniques. They bring those back here so they’re available to our patients.”

The University of Tennessee Medical Center physicians and staff continue to dedicate themselves to providing the highest level of care to patients and bring the most advanced technologies and treatments to the region. The presence of skilled, deeply committed surgical educators means surgical excellence, topflight care, and better patient outcomes.

Melissa Winchenbach
They’ve been called “pain docs.” Perhaps “sleep docs.” To be accurate, however, anesthesiologists should be called “all-round docs.”

Anesthesiologists are physicians who have graduated from medical school and completed an approved residency in anesthesiology. Not only do they control pain and suppress consciousness, but at the University of Tennessee Medical Center, they and other members of the anesthesiology team also care for surgical patients before, during, and after surgery.

The anesthesiologist is the physician who provides all-round medical care to patients throughout their surgical experiences. This all-round approach includes medically evaluating a...
patient before surgery, consulting with the surgical team, providing pain control and supporting life functions during surgery, supervising care after surgery, and medically discharging the patient from the recovery unit.

“Anesthesiologists play a vital role in assessing a patient’s medical readiness for surgery,” says Jerry Epps, MD and associate professor and chair of the Department of Anesthesiology. “They are unique in their advanced knowledge of the medical illnesses that a patient undergoing surgery may suffer, as well as the effects on the body of the specific operation to be performed.”

In the operating room, these doctors are responsible for the medical management and anesthetic care of patients throughout surgery. The anesthesiologist must carefully match the anesthetic needs of each patient to the patient’s medical condition and responses to anesthesia and to the requirements of the surgery, and must monitor life functions including the heart rate, blood pressure, heart rhythm, body temperature, and breathing.

In many surgical settings at the University of Tennessee Medical Center, anesthesiologists work in the “anesthesia care team” mode, bringing together the expertise of the anesthesiologist, certified nurse anesthetists, anesthesiology resident physicians, and others. “This team approach is known to be safer and helps ensure more successful results than one anesthesiologist or nurse anesthetist working alone,” Epps says.

After surgery, patients are transferred to a recovery/post anesthesia care unit, where they continue to emerge from the effects of anesthesia under the care of the perianesthesia nurse and anesthesiologist. The evidence of recovery – including activity level, adequacy of breathing, circulation, level of consciousness, and oxygen saturation – is continuously monitored, and pain control is optimized. In most cases, the anesthesiologist, in conjunction with the surgeon, decides when the patient has recovered enough to be sent home following outpatient surgery or has been stabilized sufficiently to be moved to a regular room or another unit.

In an intensive care unit, the anesthesiologist is uniquely qualified to direct the complete medical care of these very sick patients. Here he or she provides medical assessment and diagnosis, respiratory and cardiovascular support, and infection control.

“Our highly trained anesthesiologists also possess the knowledge to deal with many emergency and trauma situations,” says Epps, “and they care for patients undergoing radiological imaging, gastrointestinal endoscopy, placement and testing of cardiac pacemakers and defibrillators, and other nonsurgical procedures.”

Not only do the anesthesiologists at the medical center oversee pain management during surgery, they also provide pain control during other trying experiences in our lives, like chronic illness or cancer treatment, and during the most joyous experiences, such as the birth of a child.

When pain management is called for, expertise is expected and delivered. And the same highly skilled physician who provides that pain management also directs medical care, before, during and after surgery and in other medical situations.

Anesthesiologists are indeed our all-round physicians.

Amanda F. Johnson
State of the art robotic and computer technologies enable a surgeon to use micro-instruments, guided by a high-definition 3-D camera, and maneuver with complete precise control through a very small one-to-two centimeter incision. Sound futuristic? It’s not.

It’s a description of the da Vinci Surgical System at the University of Tennessee Medical Center – a method of robotic surgery, entirely controlled by the hands of your surgeon, that minimizes the pain and risk associated with a surgical procedure while increasing the likelihood of fast recovery and an excellent clinical outcome.

Jeffery Everett, MD and Ron Warner, surgical technician, prepare the instruments for robotic surgery.
An alternative to traditional open surgery and laparoscopic procedures, robotic surgery is available for a limited number of procedures. Robotic surgery enhances surgical capabilities by allowing a surgeon’s hand movements to be scaled, filtered, and translated into precise motions within the operative site. Using the FDA-approved da Vinci platform, the surgeon controls every aspect of the procedure with greater precision, better range of motion, increased dexterity, enhanced visualization, and improved access.

“The 3-D optics offer great depth perception, which is unique to robotics compared with other minimally invasive procedures,” says Jeffrey Everett, MD, a cardiothoracic surgeon at the medical center’s Heart Lung Vascular Institute. “This gives better visualization. Another unique property of robotic surgery is that the instruments can fully replicate human wrist movement.” Far more important are the benefits to patients that come with this technique. Patients may have a shorter hospital stay, less pain, less risk of infection, less blood loss, fewer transfusions, less scarring, a quicker recovery, and a faster return to normal daily activities. They can also be assured that the da Vinci Surgical System offers multiple safety features.

“Patient benefits are specific to the procedure,” says Paul Hatcher, MD, a urologic surgeon at the medical center. “Robotic surgery has permitted me to treat patients knowing they’ll generally have a faster recovery with less blood loss. However, patients should remember that even though the surgery is done through tiny holes, it’s still major surgery on the inside and those same risks apply.”

Robotic surgery doesn’t replace surgeons; in fact, surgeons undergo extensive training in the skill. “It requires complete training in open surgery with the specialty, as well as experience in major operations and then experience in laparoscopic surgery,” says Hatcher. “Then the surgeons receive training on the da Vinci system before their skills are transferred to patients with proctoring by a surgeon experienced in robotic surgery.”
The da Vinci system consists of an ergonomically designed surgeon’s console, a patient cart with four interactive robotic arms, a high-performance vision system, and patented EndoWrist instruments.

Some people hear the word “robot” and think the system is autonomous, but it cannot be programmed or make decisions on its own. A surgeon operates at the console, viewing a greatly magnified 3-D image of the body’s interior. The surgeon uses master controls to which the robotic system responds in real time by translating his or her hand, wrist, and finger motions into precise movements of the instruments.

The da Vinci system has been used successfully in tens of thousands of minimally invasive procedures worldwide. From cardiac and thoracic surgeries to gynecological and urologic procedures, the system is designed to perform many minimally invasive operations, including gastric bypasses, prostate cancer treatments, hysterectomies, and more. Surgeons at the medical center use robotics to treat patients with mitral valve abnormalities, atrial septal defects and coronary artery disease. The medical center is also the sole facility in the area that can do mitral valve repair. “The University of Tennessee Medical Center is the only one in all of East Tennessee actually doing many of these procedures,” Everett says.

An extension of various minimally invasive procedures, the robotic surgical option enables surgeons to be more precise, advancing their technique and enhancing their ability to perform complex, minimally invasive surgery with improved results for patients. More and more surgeons are using robotic surgery, and patients are gaining the benefits of improved outcomes and a quick return to daily activities.
A 47-year-old man has back surgery and is able to go home the very same day; he returns to his job in less than a month. A woman has heart surgery and is discharged just two days later. These are examples of the many patients whose lives have been changed by minimally invasive surgical procedures and the skill of surgeons at the University of Tennessee Medical Center.

From spine surgery to gynecological surgery, minimally invasive procedures have transformed the way surgery is viewed. Traditional open surgery was once a patient’s only option, requiring a lengthy stay in the hospital and creating a long term interruption in normal activity. Now patients derive tremendous benefits from minimally invasive surgery and other medical advances.

Minimally invasive procedures use emerging technologies to offer techniques that provide better patient care and more options than traditional surgery. “From a surgeon, who has been practicing many years, it is always rewarding when patients are able to benefit from things such as minimal scarring, fewer side effects, and shorter recovery time,” says Fred Klein, MD, urologist. “Using minimally invasive techniques, these benefits enable patients to return quickly to normal activities.”

Why are so many doctors and patients choosing minimally invasive surgery? Because it offers:

- A shorter recovery time
- Less pain and trauma
- A shorter hospital stay
- Less risk of infection
- Less blood loss
- Fewer side effects
- Minimal scarring
- A reduced need for pain medication
- Surgical precision
- Improved patient safety
- A faster return to normal daily activities
- And in many cases, an improved clinical outcome
Minimally invasive laparoscopic surgeries employ a surgical technique in which short, narrow tubes are inserted through small incisions. These procedures involve the use of miniature cameras and microscopes with fiber-optic lights that pass into the abdomen and, with the help of high-definition monitors, make it easier for surgeons to view organs.

Once the incisions are made, the surgeon inserts the narrow tubes. A camera and long, narrow surgical instruments are inserted into the tubes. The camera transmits images to a monitor, and the surgeon can view the affected site without having to make a large incision.

Surgeons at the medical center have the expertise to perform and teach many procedures. “Our team is made up of expert professionals,” says Gary Scott, vice president of perioperative services. “As an academic medical center, we have the knowledge and additional resources to provide the highest quality patient care. Also, being a Level I Trauma Center, we have every subspecialty; which patients can access quickly. The team works as a positive, collaborative unit.”

The minimally invasive procedures performed at the medical center include appendectomy, hernia repair, cholecystectomy (gall bladder removal), atrial fibrillation treatment, nephrectomy (kidney removal), and spinal surgery, including spinal fusion and balloon kyphoplasty. Also on the list are prostate surgery, vascular procedures (aortic and thoracic stents), lung surgery, gastric bypass and gynecological procedures such as removal of ovaries, treatment for endometriosis, and laparoscopic hysterectomies. All of these require an experienced surgeon and team who have completed advanced training in minimally invasive surgery.

“Minimally invasive techniques allow physicians to perform procedures entering through smaller incisions that once required open abdominal incisions. Patients can be seen in day surgery or have a shorter hospital stay, less blood loss, and a quicker recovery” says Robert F. Elder, MD, division of obstetrics and gynecology.

One procedure that highlights minimally invasive techniques is the surgery for lumbar spondylolisthesis, a misalignment of the vertebrae in the lumbar spine that puts pressure on a patient’s nerves causing pain or numbness in the back and legs. “Traditional surgery involved a large incision with harvesting of a bone graft, placement of pedicle screws, blood loss during surgery, a long hospital stay, and a long recovery period,” says William S. Reid, MD,

“It’s always rewarding when patients are able to benefit from things such as minimal scarring, fewer side effects, and shorter recovery time.”

- Fred Klein, MD
a neurosurgeon at the University of Tennessee Medical Center. "Now rather than one long incision, we use a couple of one-inch incisions; we can place the screws with minimal disruption to muscle; and we don’t have to harvest a bone graft from the hip. For the patient, this means only a two-day hospital stay. He's back to daily activities within a month and back to work in half the time of traditional surgery."

The University of Tennessee Medical Center surgeons are also using robotics in many minimally invasive procedures. Robotic technologies like the medical center’s da Vinci Surgical System enable surgeons to perform procedures that weren’t previously possible by allowing even greater surgical precision, with an increased range of motion, enhanced dexterity, better visualization, and improved access.

As technology develops, the use of minimally invasive procedures is continuing to expand. The University of Tennessee Medical Center remains at the forefront of this growth, and its team of experts can offer these procedures in more areas of medicine.

Wendi Hope Hager

Dr. Scott Stevens, director of endovascular surgery and a professor at UT Graduate School of Medicine, says, “Our endovascular program has been a national leader and excels not only in clinical care but in teaching and research as well. Over 100 practicing specialists nationwide have come to the University of Tennessee Medical Center, or observed live case presentations via satellite, to acquire skill sets in the newest endovascular techniques. In addition, the endovascular program has published numerous manuscripts, chapters, and textbooks.”

The University of Tennessee Medical Center is the only institution in the region approved by the Residency Review Committee to train residents in vascular surgery and endovascular techniques. The program has won many awards for research in national and international competitions. “We are extremely proud of what this program has accomplished in the past six years,” says Michael Freeman, chief of the Vascular Surgery division and a professor at UT Graduate School of Medicine. “Our patients benefit from the latest training, technology, and techniques, as well as the comprehensive approach of a multidisciplinary team.”

Scott L. Stevens, MD
The University of Tennessee Medical Center was the 23rd in the nation to install the CyberKnife® Stereotactic Radiosurgery System and has successfully treated over 500 patients. This innovative system provides an alternative or secondary option to surgery or conventional radiation for the treatment of tumors and other neurological conditions. Physicians at the Brain and Spine Institute and the Cancer Institute at the University of Tennessee Medical Center use this revolutionary technology to treat diseases and other conditions throughout the body.

CyberKnife exceeds the limitations of other radiosurgery systems such as Gamma Knife, which is restricted to providing treatments in the head only. The CyberKnife system’s unique design allows for the treatment of tumors in the brain and spine as well as the lungs, kidneys, liver, prostate, and soft tissue. Using a linear accelerator (a high-energy radiation source), X-ray guidance, and a robotic arm, CyberKnife delivers concentrated beams of radiation to a tumor or lesion from many angles; its precise accuracy minimizing the damage to surrounding tissue. The technology of the CyberKnife system is so advanced that it can compensate for patient movement during treatment eliminating the use of the rigid metal head frame needed in other stereotactic techniques. In many cases, CyberKnife is an effective alternative to traditional surgery. Patients with tumors or lesions that are “untreatable” or “unreachable”
by conventional surgery or radiation may benefit from this innovative procedure. CyberKnife’s flexible technology makes its potential use almost limitless. The system is already used to treat many types of tumors and conditions such as vascular malformations and trigeminal neuralgia, and the scope of treatment continues to broaden.

The University of Tennessee Medical Center is currently the only location in Knoxville that employs the CyberKnife Stereotactic Radiosurgery System. Thanks to this incredible technology and the medical center’s dedicated CyberKnife team, the highest quality of care is being delivered on an outpatient basis in a painless, noninvasive manner. The CyberKnife team includes radiation oncologists, neurosurgeons and other surgical subspecialists, physicists, radiation therapists, and nurses. The team develops a customized radiation treatment plan for each patient, delivered in a short course of one to five treatments.

The CyberKnife procedure consists of three key steps. Step one is the setup. For treatments of the brain, a soft mesh facial mask is custom-made to fit the patient and hold the head steady during treatment. For other areas of the body, fiducials (metal markers) are placed near the affected site to target the lesion and guide the radiation beams. In step two, a computed tomography (CT) scan is done to provide detailed information on the size, shape, and location of the affected area for treatment planning. The treatment plan tells the CyberKnife’s robotic arm the number, direction, and intensity of the beams to be delivered to the area. Step three is the actual treatment.

CyberKnife is a painless outpatient procedure that enables patients to return home after treatment and resume their normal routine without a lengthy recovery process. The treatment is noninvasive, with no risk of hemorrhage or infection, and rarely produces any side effects. This amazing technology can allow a patient to have brain “surgery” with CyberKnife in the morning and be on the golf course that afternoon.

“CyberKnife technology gives us the ability to safely treat benign and malignant conditions which we could never treat before.”
- Daniel Green, MD

Thanks to the innovative CyberKnife system, the University of Tennessee Medical Center physicians and staff are able to offer treatment to patients with tumors, lesions, and painful neurological conditions – not otherwise available in our region. Since 2005, the medical center’s CyberKnife Center has delivered over 1,500 treatments and treatment options continue to expand. CyberKnife is offering new hope to many patients by providing limitless opportunities to improve care, now and in the future.

Melissa Winchenbach
“Diet and exercise equals weight loss.” But our nation’s rate of obesity continues to rise, with almost two-thirds of adults clinically classified as overweight or obese. In the face of an alarming statistic like that, the formula no longer sounds so simple.

At the University of Tennessee Medical Center’s Tennessee Weight Loss & Surgery Center, weight-loss options are designed to meet individual patients’ needs. The multidisciplinary team of consultants is made up of surgeons, dietitians, exercise specialists, and administrative staff who partner with patients to help them achieve and maintain weight loss.

The options include weight-loss surgery, nonsurgical medical weight-loss techniques, and medically supervised meal-replacement, exercise, and lifestyle-modification programs.

**Surgical Weight Loss**

**Laparoscopic adjustable gastric banding** reduces the stomach’s capacity and restricts the amount of food that can be eaten at one time. A prosthetic ring is placed around the upper part of the stomach, creating a smaller stomach pouch that can hold only a modest amount of food and prolonging the feeling of fullness after eating.

The ring’s tightness can be adjusted by injecting saline into a small port that lies just under the skin. Patients typically have this procedure done on an outpatient basis allowing them to return home the same day.

**Laparoscopic gastric bypass surgery** (gastric bypass) is a minimally invasive procedure in which the surgeon bypasses the stomach and creates a small pouch, which causes the patient to eat less and feel full more quickly and thus restricts food intake.

A portion of the stomach is sectioned off and part of the small intestine is re-routed to the smaller section of the stomach. Typically a patient returns home after two days in the hospital.

“Weight-loss surgery is not about making people look good; it’s about treating and often eliminating the diseases associated with obesity, including diabetes, hypertension, sleep apnea, and high cholesterol,” says Gregory Mancini, MD, medical director of the Tennessee Weight Loss & Surgery Center. “For me, it’s improving the quality of life for my patients and giving them their health back.”

**Medical Weight Loss**

For patients who don’t meet the criteria for surgery, other medical weight-loss options may be available. These include medications, meal replacements, and behavioral modification, all provided under medical supervision.

While it turns out that there is no simple, easy formula for weight-loss success, the physicians and clinicians at the University of Tennessee Medical Center’s Tennessee Weight Loss & Surgery Center stand ready to partner with patients on their journey toward stronger health and a better life.

Becky Thompson
After living overweight for years, Darrell Hancock, a night shift cashier at a local supermarket, decided it was time to gain control of his health. His poor health conditions included high blood pressure, high cholesterol, joint problems, and he was borderline diabetic. With all of these health problems, Darrell was unable to enjoy his life, including his two grandkids that he so badly wanted to be able to play with.

In May 2008, he attended a seminar at the Tennessee Weight Loss & Surgery Center at the University of Tennessee Medical Center, where he learned about adopting a healthy lifestyle and diet and surgery options. “The center was a real advocate for me,” Darrell explains. “They worked with me, my doctor, and my insurance to get me the help I needed.”

On December 1, 2008, Darrell checked into the medical center where Dr. Gregory Mancini, medical director and surgeon for the Tennessee Weight Loss & Surgery Center, performed the laparoscopic gastric bypass surgery. This procedure is a minimally invasive surgery where the surgeon sections off a portion of the stomach and re-routes part of the small intestine to the smaller section of the stomach. Darrell began experiencing weight loss right away. He continued to focus on his nutrition and exercise, finding time to walk whenever he had the chance.

After a year since he first walked in the door of the Tennessee Weight Loss & Surgery Center, Darrell finds more freedoms in his life every day. “It is so much more enjoyable even just to walk,” he says proudly. Darrell, now 47, is thankful he found the help he needed. He now loves working around the house, mowing lawns and playing with his grandkids – things he struggled to do prior to the weight loss. Most recently, Darrell went to Dollywood with his family and was able to participate in everything, including riding rides, which he hadn’t done in years. “It’s really great to feel younger,” he concludes. “It’s been a real miracle.”

Wendi Hope Hager

For more information about weight-loss options, call 865-305-WELL (865-305-9355) or visit us on our website at www.utmedicalcenter.org/weightloss
Who takes care of the people in Bean Station? When someone in Union City needs surgery, where do they go? When a bicycle accident in Rogersville leaves a child in need of emergency surgery, how close is the nearest surgeon?

Historically, Tennessee’s rural communities have had too few physicians. In 1973 the Clinical Education Center, the predecessor to the UT Graduate School of Medicine, was opened to train physicians for practice in rural areas, and every year we make a difference. Of the 321 resident physicians who completed their programs at UT Graduate School of Medicine over the past five years, 45% stayed in this region to impact patient care. And of those, close to 50% chose to practice in rural areas.

Studies tell us, however, that those areas frequently suffer from a lack of an adequate number of surgeons. A report in the Journal of the American College of Surgeons states that as few as four general surgeons per 100,000 people work in rural America, and in Tennessee there are often twice as many job openings for general surgeons as there are qualified applicants. Furthermore, a lack of surgeons can force patients to travel to larger, distant hospitals, thus straining the urban hospitals’ services.

To address the surgical needs of people in less populated areas, UT Graduate School of Medicine started a rural rotation for surgical resident physicians in 1997. Ten years later, close to 20 surgeons have entered practice in rural areas. From Spring Hill to Spring City, our surgeons have set up shop. From New Hope to New Market, we’ve educated physicians to provide surgical care. From Franklin to Farragut, the surgeon is in.

“During the rural rotation, our physicians learn about the variety of surgical cases they would encounter as rural general surgeons,” says Mitchell Goldman, MD, professor and chair of the Department of Surgery. “They experience procedures in gynecology, endoscopy,
urology, orthopedics, and perhaps even neurosurgery and vascular surgery. Rural surgeons see a broad scope of cases, more so than urban surgeons."

Surgical resident physicians are required to complete the three-month rural rotation. They experience rural general surgery at Morristown Hospital, under the leadership of general surgeon and UT Graduate School of Medicine surgery graduate Tommy Thompson, MD.

The arrangement must be working. Before the rural rotation started in 1997, 38% of graduates became rural surgeons. After it was implemented, almost 60% have entered practice in rural communities.

“The rural rotation was one of the reasons I chose UT Graduate School of Medicine as the location for my residency,” says Robert J. Wilmoth, MD, a general surgeon at Claiborne County Hospital in Tazewell, Tennessee, and a 2006 graduate of the UT Graduate School of Medicine Department of Surgery residency program. “When I was 10 years old, my grandfather had a severe car accident and began suffering from headaches. The local emergency room couldn’t diagnose a problem. When he was later correctly diagnosed with a brain aneurysm, I got my grandpa back. On any given day, I might remove the tonsils from a 6-year-old, and then perform an arterial embolectomy. The rural rotation shows us what a surgeon can be.”

UT Graduate School of Medicine’s rural rotation is one of only a few in the U.S. “We train all our residents to be both academic surgeons, who could practice and teach in large academic institutions, and rural surgeons,” Goldman says. “We also require a gynecology rotation and offer a one-year international rotation and a basic science research rotation. After this diverse experience, they can choose the path of their careers. The versatility of the program sets it apart from others and creates more highly trained surgeons.”

In the Department of Surgery, resident and fellow physicians receive a breadth of training that prepares them for work in rural settings, urban settings, and academic practices. And through the rural rotation, many surgeons realize the impact they can make in Small Town, U.S.A.

Efforts are under way at UT Graduate School of Medicine to expand the rural surgery program. An endowment fund established by Sperry Nelson, MD, chief of General Surgery, now supports a one-year residency and fellowship program focusing entirely on rural surgery and the advancement of surgical patient care in underserved regions. (see related article pg. 24)

Rob Wilmoth, MD, a former surgical resident physician and currently a general surgeon at Claiborne County Hospital in Tazewell, Tennessee, believes that expanding the rural rotation is a must.

“If we can give young resident surgeons experience in a rural setting early in their residency periods, they will see options in surgery they didn’t know about before,” he says. “This could increase the number of surgeons choosing rural surgery and reduce the attrition rate for surgery residents overall. Plus, those who know they want to become rural surgeons can get additional experience, particularly in specialty surgery.”

The expanded program would operate at several rural hospitals in East Tennessee and would also include rotations with specialty surgeons at the University of Tennessee Medical Center, including those in orthopedics, neurosurgery, urology, and other specialties.

You can help. To provide philanthropic support for the Rural Surgery Endowment Fund, contact the University of Tennessee Medical Center Office of Development, Attn: Rural Surgery Endowment Fund, 1520 Cherokee Trail, Suite 110, Knoxville, TN 37920. Or for more information, contact the Office of Development at 865-305-6611 or development@utmck.edu.
Paul Huffstutter, MD and Leonard Hines, MD direct the medical simulation center, a facility where medical professionals use lifelike mannequins in an operating room setting to simulate medical emergencies and learn surgical techniques. Funding for SimMan was provided through the UT Medical Staff Dues Committee.
The unconscious patient has a highly abnormal heart rate and extremely low blood pressure. The medical team labors to save the patient, but its united efforts are unsuccessful. Is the next step to comfort the family? No. In this case, an instructor coaches the team to start a discussion about what has occurred. Minutes later the first team is replaced by another, a technician pushes control-panel buttons, and suddenly the patient comes to life, this time displaying symptoms of pulmonary distress, perhaps pneumonia.

You have just entered a training facility complete with lifelike mannequins that have blood pressure, pulse, and respiration. Welcome to the UT Graduate School of Medicine Medical Simulation Center at the University of Tennessee Medical Center.

Technological advances have reshaped patient care, modernized medical education, and facilitated research at the University of Tennessee Medical Center and UT Graduate School of Medicine. These advances have also changed the way healthcare professionals at our academic medical center achieve the highest skill levels and deliver innovative treatments.

The Medical Simulation Center, established in early 2008 after careful consideration, planning, and fund-raising, offers our medical teams the opportunity to enhance their skills using life-size human mannequins, laparoscopic simulators, and other skills-building models. Department of Surgery chair Mitchell Goldman, MD, and Department of Anesthesiology chair Jerry Epps, MD, helped establish the simulation center with the assistance of Melinda Klar, RN, the center administrator, and Judy Roark, CST, the coordinator and skills coach.

In September 2008, Leonard Hines, MD, FACS, and Paul Huffstutter, MD, FACS, were named as co-directors of the center. Former associate clinical professors in the Department of Surgery at the University of Tennessee Health Science Center in Memphis, both are skilled surgeons who have chosen to expand and further advance the Medical Simulation Center by facilitating its use in educating and practicing responses to medical and surgical events.

Physicians and students can work to improve their individual skills or learn as part of a medical team while their reactions and decision-making acumen as individuals and team members are measured. “The simulation center monitors, records, and measures performance using audiovisual equipment and post-exercise debriefing,” Huffstutter explains “This type of training improves critical thinking, decision-making, and clinical techniques.”
New laparoscopic trainers offer surgeons the chance to practice a variety of skills, such as suturing, dissection, and pattern-cutting, and allow physicians to improve their visual, tactile, and physical-coordination abilities. The training procedures range from the basics, such as drawing blood, to more sophisticated procedures, such as endovascular surgery and trauma care.

SimMan, a full-size patient simulator, provides training using preprogrammed scenarios, instructor-created scenarios, and on-the-fly events. The simulations can include planned manipulations of blood pressure, pulse, cardiac rhythm, or breath sounds and can call for drug recognition and response. X-rays and laboratory data may be made available during a scenario.

Some mannequins, such as SimNewB, can move their limbs and cry. For training purposes, SimNewB’s pulse, blood pressure, and breathing can be controlled to increase the realism of the created situation.

Huffstutter emphasizes the importance of planning when it comes to scenario design. “The purpose of the exercise must be well identified,” he says. “The baseline vital signs, as well as their progression throughout the scenario, must be programmed and the proper treatments for recovery defined.”

Hines expands on the basic concept: “Medical simulation is a type of immersive training with feedback, in which users practice tasks and processes in lifelike scenarios. In addition to feedback from observers, peers, and video, simulators also provide numerous performance metrics to assist in the assessment and improvement of clinical skills.”

Through simulations of medical events, from simple injuries to complex illnesses, training can be translated into action in realistic emergency-room and operating-room settings, allowing the medical team to make rapid decisions that may one day be required in real-time emergencies.

Lea Anne Law
When he graduated from medical school in 1959, a gallon of gas cost 25 cents. Alaska and Hawaii became states that year, and NASA introduced America’s first astronauts. On the medical front, pacemakers, open-heart surgery, and the polio vaccine were new, and smoking was found to shorten life spans. Medicare and Medicaid did not exist.

A half-century and innumerable medical advances later, one thing remains constant: the devotion to medicine felt by Alfred D. Beasley, MD, FACP, professor emeritus at the University of Tennessee Graduate School of Medicine, Knoxville.

In March, Beasley was recognized by the American Medical Association for the 50-year anniversary of his graduation from medical school. He graduated from UT College of Medicine in Memphis and completed his residency and fellowship training at what is now the University of Tennessee Medical Center and Emory University.

In reflecting on the changes he’s seen over the past 50 years, Beasley remembers, “When I arrived [at UT Hospital] in 1959, CPR was performed as an open-chest procedure. We were encouraged to carry pocket knives so we could quickly cut open the chest, reach in between the ribs, and start squeezing the heart of someone who’d had a sudden cardiac arrest. Soon closed-chest massage became recognized as the preferred method for prompt treatment of cardiac arrest.” In fact, Beasley was the first physician in Knoxville to achieve a successful resuscitation with the new procedure.

He continues to provide both expert clinical care to patients and mentoring to resident physicians and fellows. He served as chairman of the Department of Medicine at the University of Tennessee Medical Center for 30 years and was awarded professor emeritus status in 1997. Beasley has also served as director of Graduate Medical and Dental Education at UT Graduate School of Medicine since 1968.

“I’ve treasured my association with the physicians who have continued to dedicate their time, energy, and skills to make UT Graduate School of Medicine and the University of Tennessee Medical Center the assets to the region they are today,” he says.

Amanda F. Johnson
Not one who seeks out the spotlight or wants to be fussed over, Dr. Sperry Nelson would much prefer to go quietly about his business, spending much of his time ensuring the future of the General Surgery program at UT Graduate School of Medicine.

How is he doing this? you may ask. In addition to educating medical students and residents on surgical skills, Nelson has created both the Nelson Chair of Excellence in General Surgery and the University of Tennessee Rural Surgery Endowment Fund at UT Graduate School of Medicine. From completing his internship and residency training at the UT Graduate School of Medicine to serving in numerous other capacities, including department chair and volunteer faculty member, his commitment to the medical center, the UT Graduate School of Medicine, and, most of all, the people of East Tennessee runs deep.

A third-generation general surgeon, Nelson says his passion for maintaining and further developing a vibrant surgical training program that serves this region is a very personal one. “It’s just something that I feel I have been personally led to do. The people of East Tennessee need this and deserve this,” he says.

According to Nelson, the benefit to the communities in which surgeons and other physicians are trained is unquestionable. A large percentage of residents choose to practice in areas immediately surrounding the places where they were trained. “That’s good news for us,” says Nelson. “It is an issue of both quality and quantity. We need more surgeons than are currently being trained, and it isn’t a quick fix. It can take years to catch up. General surgery as a specialty has changed over time. Many of the procedures my grandfather and father, and even I, performed early on are now provided by specialists. Consequently, monies for training general surgeons are often not earmarked and often don’t make their way to those programs and individuals who need them most.”

Particularly hard hit in Tennessee are rural counties, where general surgeons are often the driving force keeping rural hospitals open. In recognition of this need and as a true testament to his commitment to making a difference, Nelson has generously offered to match all charitable gifts made to the Rural Surgery Endowment Fund dollar for dollar.

When asked about the most rewarding aspects of his philanthropy, Nelson notes simply, “I am one of those fortunate people who is able to do what he is passionate about each day.”
Physicians Give Back

Sincere gratitude and thanks to those physicians and faculty at UT Graduate School of Medicine and the University of Tennessee Medical Center who contributed to the Physician & Faculty Annual Campaign. This campaign embodies the pioneering spirit of the medical center and UT Graduate School of Medicine to advance a longstanding tradition of excellence in healthcare throughout East Tennessee.

“I am particularly encouraged to see that so many of our physicians and faculty have recognized the value not only of their medical and practical expertise, but also of their financial contributions to a medical center and UT Graduate School of Medicine that are truly committed to making a genuine difference in the lives of our patients and in the education and training we are able to provide medical students and residents,” says Dr. Jerry Epps, chairman of the Physician & Faculty Annual Campaign.

Charitable gifts from physicians, faculty, and other philanthropists have helped enable and expand this commitment to excellence in medicine, furthering research and training tomorrow’s physicians. Gifts have created endowments and gift funds, funded new patient-care programs and buildings, and provided for educational and research endeavors by residents and faculty.

In 2008, physician and faculty gifts contributed to the Development Office’s tremendous strides on our campus in the area of philanthropic giving. With more than $11 million raised, estimated levels of support exceeded several benchmarks, making this an important year for hospital programs and our mission of excellence in healthcare for the communities we serve.

With so many ongoing needs identified, we look forward to even greater participation by our physicians and faculty during the 2009 Physician & Faculty Annual Campaign. This year’s goal is 100 physicians and $100,000 in charitable donations. Gifts of $50 or more are also recognized by the 1956 Society.

Thank you again to all those who participated in the 2008 campaign.

2009 Torch Campaign – Employees Care Co-Chairs

The Torch Campaign is pleased to name our 2009 campaign co-chairs. Leading this year’s campaign effort will be Carol Houser, administrative coordinator for faculty and staff affairs at UT Graduate School of Medicine; Garlena Lee, director of UT Sleep Disorders Center at the University of Tennessee Medical Center; and Brian Wood, director rehabilitation services at the University of Tennessee Medical Center.

The annual Torch Campaign is August through September and is a collective effort by employees throughout the University of Tennessee Medical Center and UT Graduate School of Medicine who raise support and awareness for our patient care, education, and research programs. Thank you, Carol, Garlena, and Brian, for your volunteerism and leadership in the Torch Campaign and your commitment to the patients and families we serve throughout the region.

Thank you again to all those who participated in the 2008 campaign.
When Joe and Betty Googe moved to Knoxville in 1966, it didn’t take long for Betty to find her way to the medical center and sign up to volunteer. And 42 years later, she’s still there.

“I think I have done just about every volunteer job there is,” notes Betty. From the book cart to the surgical lounge to the hospitality cart to pediatrics, she has never hesitated to lend a helping hand wherever it was needed. “Pediatrics was my love, though,” says Betty. It was there that she initiated an “interest group” whose members made pajamas and put together health bags that were given to all the young patients.

“We did whatever it took to get those bags together,” she says. “We went to dentists’ offices to collect toothbrushes and toothpaste, to motels to get soap, and we had one of our volunteers make the drawstring bags that the supplies went in.”

After Joe retired as head of the electrical-engineering department at UT, it wasn’t long before he found himself volunteering as well. “Actually, my wife shanghaied me,” says Joe. “But as soon as they put me behind the cash register in the gift shop, I was happy. It’s a great place to volunteer, and I really enjoy talking to the people that come in from all around our region. It is such a rewarding experience.”

Betty also works in the gift shop one day a week now. She sees a lot of new fathers in there, and her advice is always the same: “Give that baby a hug every day, always say ‘I love you,’ and take him or her to church.”

When asked how long she plans to continue volunteering, Betty says, “I love to be a giver. I guess I will stay until they put me out to pasture.”

For more information about Volunteer opportunities at the University of Tennessee Medical Center, please contact Mary Brown at 865-305-9515.

The fourth annual TEE UP for Trauma golf tournament, presented by Food City and held on May 20 at Landmark Golf Club at Avalon, brought together a full field of golfers for a day of great fun to support the University of Tennessee Medical Center’s Trauma Center.

Emergency and Trauma Services at the University of Tennessee Medical Center is the area’s only Level 1 Trauma Center for adults and children and treats thousands of patients each year. Trauma Services also supports LIFESTAR, the aeromedical transport service for the University of Tennessee Medical Center, which transports approximately 200 patients each month.

This year’s honorary event chair was Dr. Jerry Punch, ESPN’s lead commentator for NASCAR coverage. “I was thrilled to be a part of the University of Tennessee Medical Center’s TEE UP for Trauma event,” Punch says. “I know the East Tennessee community is better off because of the incredible team of professionals who respond to each and every trauma in the region.”

Proceeds from this year’s event will directly support patient care by purchasing two GlideScope video laryngoscopes, which will give trauma physicians and residents a clear view of the patient’s airways and enable quick intubation. In addition to this important state-of-the-art equipment, proceeds from TEE UP for Trauma will provide resources allowing healthcare professionals to attend advance practice training and certifications.

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University Radiology
Co-Chairs Named

The University of Tennessee Medical Center and UT Graduate School of Medicine are honored to announce that Christy and Teddy Phillips will be the 2010 An Evening in Orange gala co-chairs. During the past year, Christy served on the 2008 An Evening in Orange committee and has helped make the gala successful through her service on the sponsorship committee.

Christy and Teddy are deeply committed to the mission of the University of Tennessee Medical Center and to the medical center’s patients, families, and staff. Both are looking forward to chairing the upcoming event and working with the An Evening in Orange committee to create a special, elegant evening for all in attendance.

An Evening in Orange will be held on January 16, 2010, at Knoxville’s Cherokee Country Club. Proceeds will benefit the Heart Hospital and its dedication to the multidisciplinary, integrated care of our Heart Lung Vascular Institute’s in-patients.

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For more information about these stories or other philanthropic opportunities at the University of Tennessee Medical Center or UT Graduate School of Medicine please contact the Development Office, 865-303-6611 or development@utmck.edu.
If you are a physician, researcher, allied health professional, or faculty member seeking continuing medical or dental education, you might be interested in these upcoming programs offered by UT Graduate School of Medicine.

**Fall 2009 Course Calendar**

### September 10-11

**12th Fall Psychiatric Symposium**

Knoxville Convention Center, Knoxville, Tennessee

The Fall Psychiatric Symposium, started in 1998 by the Mental Health Association of East Tennessee, has grown to become the largest multidisciplinary psychiatric event in the Southeast. It is attended each year by nearly 400 mental health professionals, including psychiatrists, primary care physicians, physician assistants, advanced nurses, nurses, pharmacists, and therapists. The event has a tradition of recruiting nationally known speakers who appear along with regional faculty.

This year the Fall Psychiatric Symposium offers attendees the opportunity to shape their learning experience by attending opening and closing sessions wrapped around breakout sessions of their choice. This will enable learners to get continuing education suited to their disciplines.

### September 11-12

**Heart, Lung, Vascular Update for Primary Care Providers: Tools & Treatments for Improved Patient Management**

Sponsored by the Department of Internal Medicine and UT Graduate School of Medicine

UT Conference Center, Knoxville, Tennessee

Cardiovascular and pulmonary diseases affect a large number of Tennesseans, whatever their age or race. New strategies and treatment options are coming to light every day. The Heart, Lung, Vascular Conference is a course that can help physicians, nurses, and allied health professionals tackle these looming medical issues by providing the latest information on tools and treatments from regional experts.

### October 22

**Second Annual Stroke Symposium: Continuum of Care: Impacting Management, Improving Outcomes**

Jointly sponsored by UT Graduate School of Medicine and the UT Brain and Spine Institute

UT Conference Center, Knoxville, Tennessee

Stroke is the third leading cause of mortality in Tennessee, yet rates of compliance with nationally accepted guidelines for treatment and primary or secondary prevention of stroke vary significantly across the state. The Tennessee Heart Disease and Stroke Prevention and Care Plan outlines the objectives of preventing stroke, improving access to care and emergent treatment, and ensuring that all Tennesseans diagnosed with stroke receive aggressive treatment to prevent associated complications, disabilities, or death. Education that strengthens healthcare providers’ knowledge of these guidelines is crucial to improving outcomes for such patients.

To register or for more information call 865.544.9190 or visit our website www.tennessee.edu/cme
Surgical Care Physicians

Our academic medical center includes a comprehensive array of specialties and ensures the highest quality in patient care. With dedicated faculty, staff, and supporting subspecialties, the medical center is able to provide patients with options for their healthcare needs.