A VISION FOR HEALTHCARE
Lahey Health is what’s next in healthcare

MEETING OUR MOST URGENT NEEDS
Emergency department expansion reflects rising patient visits

RESCUE LUNG/RESCUE LIFE
Program serves as a national model

BE HEALTHY BEVERLY
Nutritious food program encourages healthy eating for children
When we sat down to conceive a name for Lahey Health’s newest magazine, we knew we wanted a name that represented the core of our mission and embodied our commitment to our patients to excel in every aspect of their care. The title also needed to capture the vibrant, innovative health system we are building—a system that is transforming the way care is delivered. Because of our approach to care and our confidence in those who support our work, we determined that vital was the best word to describe the many individuals who have shaped and continue to shape Lahey Health.

The word vital describes not only our character and the core of what we do—the care we provide our patients is indeed vital—but it also conveys the symbiotic relationship Lahey Health has with our patients and families to which we provide high-quality care. The services we provide—in the form of direct care, the health-related programs we offer and sponsor, and more—are vital. And, in turn, as a nonprofit health system, the support we receive from our patients, their families, our donors, our volunteers and others is vital.

At Lahey Health, our purpose is to create a healthier world, starting right here in the communities we serve. That, above all else, is what we see as vital.

Together, our exceptional physicians, nurses, staff and volunteers start and end each day with this goal in mind. It is the driving force behind our compassionate, comprehensive care, our patient-focused research and our hands-on training for aspiring caregivers. We are joined in this effort by loyal community benefactors. These friends share our commitment to reaching our ultimate goal, and they energize our work.

This is a critical moment in our organization’s history. We are preparing now to meet the needs of our community over the coming decades in the midst of a dynamically changing healthcare landscape. Legislative and market forces are prompting closures and consolidations of some healthcare organizations, and growth and pre-eminence of others. These forces touched our community in 2012, when Lahey Health was formed through the integration of Lahey Clinic and Northeast Health System. More recently, in September 2013, board leadership of Winchester Hospital and Lahey Health agreed to affiliate, and the Health Policy Commission approved that affiliation in May, which we are thrilled about.

The new Lahey Health responds to what our community demands and deserves. It makes high-quality healthcare cost-efficient, accessible and personal by offering a full continuum of seamlessly delivered services in superb hospitals and primary and specialty care group practices in 26 towns and communities, as well as senior and behavioral care services. Every day, you will see our passion for caring reflected on the faces of our patients, who live in the communities we at Lahey Health also call home.

When it comes to care delivery, we are not satisfied with the status quo. We are forward thinkers who work tirelessly to advance medicine and healthcare to benefit the communities we serve.

In this magazine, you will read profiles in character—stories about the traits that set this institution apart and the people who define who we are. You will also read about our principles of knowledge—our evidence-based approach to medicine in seeking new methods of detecting and treating disease and the knowledge that we share with new generations of caregivers. And you will read how we put our ideas in practice—the ways we are using our resources to serve as a force for good in our community.

Our benefactors are key stakeholders in our success. They allow us to continue enhancing our services so that we can deliver the very best care. The benefits our patients and their families experience are a direct result of generous community support for our mission.

We hope you enjoy learning more about Lahey Health, and that our story will inspire you to join us in our endeavor to improve health and wellness.
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A TRADITION OF INNOVATION

In 2012, Lahey Clinic and Northeast Health System, two institutions with long histories in Massachusetts, came together. We share a tradition of service, community outreach and advancing healthcare—and now we share a name: Lahey Health.

After graduating from the College of Physicians and Surgeons in the City of New York in 1868, Samuel W. Torrey, MD, joined his father’s general practice in Beverly, where his primary interest became obstetrical and gynecological surgery. Inspired by the care of Dorothy Brown, the first nurse Dr. Torrey recruited to his team, who had worked in her native England with Joseph Lister, the father of aseptic surgery—Dr. Torrey opened the Beverly Hospital Training School for Nurses in 1893. Students received on-the-job training and

HISTORY
6 summer 14

OUR FOUNDERS

Gloucester resident Addison Gilbert bequeaths more than $100,000 to establish a free hospital for citizens.

Beverly Hospital donors contribute more than $100,000 for the construction of a new hospital.

Northeast Health System opens BayRidge Hospital in Lynn.

Lahey Clinic and Northeast Health System affiliate to form Lahey Health, which offers medical services in 84 specialty departments throughout 26 locations in eastern Massachusetts and southern New Hampshire.
in 1902, lived on campus when the Cross House opposite the hospital was converted into a nurses’ residence.

Inspired by the founders of Mayo Clinic and Cleveland Clinic, Frank Lahey, MD, a Harvard-trained surgeon, pioneered the concept of the multidisciplinary group practice in the eastern United States. Dr. Lahey’s vision stemmed from his experience as a chief military surgeon in the army medical corps during World War I. He treated large numbers of high-acuity patients in difficult circumstances, which reinforced his belief that the skills of the physician and the broader institutional resources required to address a patient’s needs ought to be wielded as one, in a coordinated, patient-centric manner.

Addison Gilbert was a wealthy businessman, community activist and a lifelong bachelor who lived with his step-mother until she died just months before him. Gilbert was well aware of the dangers of living and working near the sea and quarries, and that the journey to Boston or Salem for those who needed care was harrowing. His will states, “It is my wish to found and establish in the City of Gloucester a hospital...to admit as patients therein such citizens and inhabitants of the city...as may need medical or surgical aid and treatment.” He named five trustees for this new hospital.
Robert E. Wise, MD, was one of the nation’s most respected radiologists and a leading force behind Lahey Hospital & Medical Center.

He was the last physician to be personally hired by Lahey Clinic’s founder Frank Lahey, MD, but the two men would never work together. Dr. Lahey died only days after interviewing Dr. Wise and offering him a job. Dr. Wise joined Lahey Clinic in 1953 as a staff member in the Department of Radiology. He had a distinguished career in medicine, and in 1973 was appointed chair of the Board of Governors. A year later, Dr. Wise assumed the duties of chief executive officer, a position he held until his retirement in 1991. During that same year, he established the Robert E. Wise, MD, Research and Education Institute, which continues to fund top research and education initiatives for Lahey Hospital & Medical Center.

When he passed away on August 11, 2012, he left behind a manuscript filled with rich details of Lahey Hospital & Medical Center’s history—a work he had been compiling for the last 20 years. In memory of Dr. Wise, Lahey Health has published his book, Lahey Clinic: From Boston to Burlington. The book offers a historical look at the evolution of Lahey Hospital & Medical Center, chronicling Dr. Wise’s tenure as chief executive officer and his leadership of the successful effort to relocate Lahey Clinic from Commonwealth Avenue in Boston to Mall Road in Burlington.

Reserve your complimentary copy today by calling 781.744.3333 or email vital@Lahey.org.

Learn more about the Robert E. Wise, MD, Research and Education Institute at Lahey.org/RobertEWiseMDInstitute.

The Lahey Hook

Practicing physicians, students and colleagues who saw Frank Lahey, MD, operate described him as a master technician and innovator.

Dr. Lahey’s drive to improve surgical outcomes led him to invent a skin retractor—an instrument used by a surgeon either to separate the edges of a surgical incision or hold back underlying organs and tissues during surgery. His invention, known as the Lahey hook, is still manufactured, sold, and used today. A 7.5-inch, stainless steel Lahey hook can be purchased online for roughly $65.

It is not surprising that Dr. Lahey took the time to perfect the surgical tools he and others used, because he had a strong desire to perfect surgery. By the 1930s, Lahey Clinic was known worldwide for its impressive surgical outcomes—specifically in thyroid and esophageal surgery as well as surgery for cancer of the stomach and bowel. The “two-stage surgery” that Dr. Lahey pioneered, in which surgery was completed in two steps over a period of two to four days, greatly improved surgical outcomes, decreasing the mortality rate following thyroid surgery from 1 in 5 patients to 1 in 140 patients.

The Lahey hook continues to be used in operating rooms everywhere—a testament to Dr. Lahey’s enduring legacy.
In just seven years, urologist Arthur Mourtzinos, MD, MBA, has made significant contributions to clinical practice, our academic mission and administrative leadership at Lahey Hospital & Medical Center. From the ground up, he developed the Continence Center at Lahey Medical Center, Peabody, into one of the busiest practices on the Peabody campus. Dr. Mourtzinos is also an assistant professor of urology for Tufts University School of Medicine and serves on the admissions committee, qualifying candidates for admission into the program. In October 2012, he was elected as a member of the Lahey Clinic Foundation Board of Trustees.

His next project is increasing alumni engagement as executive director of the Alumni Association, a role he assumed in 2012. A member of the Alumni Association himself, Dr. Mourtzinos completed his residency in urology at Lahey Hospital & Medical Center in 2006 and understands the importance of providing opportunities to current residents and fellows.

The Alumni Association was established in 1968 to encourage a close and continuing relationship between its membership and Lahey Hospital & Medical Center, to further the organization’s educational goals, and to advance medicine through the education of tomorrow’s healthcare leaders.

“I really feel now is the time for the Alumni Association to become more involved, particularly during such a critical time in healthcare,” Dr. Mourtzinos said. “In addition to providing more opportunities for residents and fellows to attend medical conferences while they are training, I would like to give back to alumni in the form of lectures and events.”

In March 2013, the Alumni Association hosted a reception and dinner, featuring keynote speaker Leonard N. Zinman, MD, the director of the Center for Reconstructive Genitourinary Surgery in the Institute of Urology, whose career at Lahey Hospital & Medical Center spans 43 years. On May 3, 2014, alumni celebrated a reunion.

“It’s important that we are more involved with incoming residents and educate them about the Alumni Association,” Dr. Mourtzinos said. “Through contributions from alumni, we can support them throughout the course of their residencies.”

THE BUSINESS OF MEDICINE
A native of Lowell, Mass., Dr. Mourtzinos decided to join Lahey Hospital & Medical Center after pursuing a fellowship at University of California Medical Center in Los Angeles because he said it gave him the unique opportunity to build a clinical practice, teach students, and pursue administrative leadership. His experience as a young adult, helping his father run the family business—the Lowell House of Pizza as well as a convenience store—continues to fuel his interest in business and administration. In medical school, Dr. Mourtzinos was on track to becoming one of the first two MD-MBA students to graduate from Boston University’s then newly created joint program for students interested in both the practice of medicine and the business aspects of medicine. He decided instead to focus on completing his Doctor of Medicine degree, and in 2009, he returned to graduate business school. While working full time in the Institute of Urology, Dr. Mourtzinos completed an MBA at Babson College in June 2012.

“At some point in the future, I’d like to continue to move into administration, particularly if changes in healthcare continue to strain physicians in the way that we’re able to practice,” Dr. Mourtzinos said. “At this time, I really enjoy the surgeries I perform, my work and caring for patients.” / Megan Youngblood

To learn more about the Alumni Association, contact Margaret McMannmon at 781.744.2955.
Lahey Health and Winchester Hospital Sign Affiliation Agreement

Board leadership of Winchester Hospital and Lahey Health in September agreed to affiliate. This affiliation, which recently received regulatory approval, will bring together two high-performing organizations with a shared vision to deliver exceptional healthcare in a community setting.

Together, Lahey Health and Winchester Hospital will build a strong system of care in key clinical areas. Winchester Hospital is a 229-bed facility that provides general, bariatric and vascular surgery, orthopedics, pediatrics, cardiology, pulmonary medicine, oncology, gastroenterology, rehabilitation, radiation oncology, pain management, obstetrics/gynecology and a Level IIB Special Care Nursery.

Lahey Hospital & Medical Center Physicians Make Boston Magazine’s 2013 Top Docs List

Each year, Boston Magazine highlights the best physicians in the Boston area, who specialize in more than 50 areas of medicine. Many Lahey Hospital & Medical Center physicians made the 2013 Top Docs list, which featured 650 area physicians in total. See the highlights for Lahey Hospital & Medical Center’s Top Docs below.

Lahey Hospital & Medical Center doctors made the list

- 40

Specialties represented

- 23

Surgical specialties represented:

- 6

Division of Medicine specialties represented:

- 16

Doctors who provide cardiovascular care/surgery:

- 9

Lahey Health partners with Honoring Choices Massachusetts

Lahey Health has become the healthcare system Community Partner of Honoring Choices Massachusetts. The Honoring Choices program will support Lahey Health clinicians in facilitating health-care planning discussions with patients and their families, and in offering quality, personalized care throughout patients’ lives.

Clinicians at Beverly and Addison Gilbert Hospitals; Lahey Medical Center, Peabody; Lahey Hospital & Medical Center, Burlington; and all Lahey Health Primary Care will work in collaboration with Honoring Choices to develop an educational approach for patients and families as it relates to advance care planning.
Innovative Treatment for Early-Stage Breast Cancer

Lahey Medical Center, Peabody, has become the first medical center in Massachusetts to offer intraoperative radiation therapy (IORT) to women with early stage breast cancer. IORT is a customizable form of radiation therapy that can be given to patients during a lumpectomy. IORT enables the surgeon, under the guidance of a radiation oncologist, to administer a dose of radiation directly to the tumor while the patient is having surgery. This helps eliminate the need for extensive follow-up treatment and avoids unnecessarily treating healthy breast tissue.

Lahey Hospital & Medical Center Named a 100 Top Hospital

In March, Truven Health Analytics™, an independent organization that provides objective hospital performance benchmark data, recognized Lahey Hospital & Medical Center in an independent study as one of the nation’s 100 Top Hospitals, one of only 15 academic medical centers to receive this honor. Inclusion on this list means that we are among the best hospitals representing the highest national standards in hospital care and management today and exemplifies balanced excellence in performance across our organization. In April, Becker’s Hospital Review named Lahey Hospital & Medical Center to its annual “100 Great Hospitals in America” list. The list is a compilation of the nation’s most prominent, forward-thinking healthcare facilities, which are home to countless medical and scientific breakthroughs, provide best-in-class patient care and serve as stalwarts of their communities.

Hospitals Ranked as Top Performers

Beverly Hospital and Addison Gilbert Hospitals, both members of Lahey Health, were each named a Top Performer on Key Quality Measures by The Joint Commission, the leading accreditor of healthcare organizations in America. The hospitals were recognized for their excellent use of evidence-based clinical processes that improved care for heart attack, heart failure, pneumonia and surgical patients. These Lahey Health hospitals are among the top third of all hospitals in the United States to earn the distinction of Top Performer on Key Quality Measures. To receive the status, each hospital must achieve performance of 95 percent or above across all reported accountability measures.
MEDICAL ETHICS

HEALTH ANALYTICS AND BIG DATA

In *Lahey Health Journal of Medical Ethics*, Martin S. Kohn, MD, MS, FACEP, FACPE, the chief medical scientist for IBM Research’s Care Delivery Systems, confronts the ethical use of IBM’s computer Watson as a tool to help make healthcare decisions. Scientists and medical professionals are developing powerful tools to use health and personal information to deliver more effective and personalized medicine, Kohn explains. But do these tools also pose a threat to patient privacy and security? Is there a risk of misuse in delivering care?

IBM is working with Memorial Sloan-Kettering Cancer Center and Wellpoint, a large private health insurer, to program Watson to help choose therapies for patients with cancer. Watson is a natural language-processing system that actually understands written English. Watson learns the critical attributes from a cancer patient’s history, identifies critical attributes from the patient’s electronic health record, and then reviews literature and guidelines to collect the information needed to offer suggestions about therapeutic options. Watson makes it easier for healthcare providers to make an evidence-supported decision by giving them access to the ideas from more literature than they could otherwise use.

For example, take the case of a woman with metastatic lung cancer. She is ambulatory, but limited by shortness of breath, and she has a history of diabetic neuropathy. Watson would review the literature to extract suggestions that would benefit the patient without exacerbating her other conditions. The data-driven decision support tools might also identify a group of 250 people very similar to the original patient and find that patients receiving an additional drug that was not reported in the literature had better outcomes.

How that power is used, Kohn notes, is in the hands of the decision maker, even though he also recognizes that if it were the provider’s goal to misuse information delivered by Watson to deny care to a patient, he or she could accomplish this with less elaborate means. Protecting the interests of all stakeholders, including securing patients’ privacy and security, will be a continuous task in optimizing such advanced technology.

Read the entire article at Lahey.org/MedicalEthicsJournal.
As Lahey Health’s chief scientific officer, Rocco Ricciardi, MD, MPH, leads the research mission through the oversight of all research operations at the institution. An assistant professor of Tufts University School of Medicine, Dr. Ricciardi has conducted award-winning research focused on patient safety, outcomes and access to state-of-the-art surgical care. He will direct research endeavors system-wide by evaluating current clinical and laboratory investigations, identifying goals for future clinical trials, and working closely with division and department chairs to ensure that research activities are aligned with the overall strategy of the organization. Dr. Ricciardi’s leadership will help inform the research structure, strategic planning and development of all areas of research across the institution.

Why did you decide to take on the role of Chief Scientific Officer?
As a clinician and surgeon, you get to a point that you feel confident about what you do, and it’s really helpful to shape other parts of your brain to keep yourself thinking and learning. Medicine is a humbling profession; however, I find that my research has shaped what I do in the hospital and vice versa. I need the clinical side of things in order to keep my research going forward, and thus the opposite—the research areas provide evidence bases for what I do clinically. That is what I would like to see happen at the institutional level. Through evidence-based projects, the institution’s strong clinical expertise can provide even better care for our patients.

Why is comparative outcomes research important?
Since 2007, the Colon and Rectal Surgery Department has collected outcomes data particular to colon and rectal surgery procedures as well as information regarding acute care stays, emergency room visits and data across the country. This data provides real-time results and allows us to review our outcomes for quality assurance. For instance, we analyzed outcomes regarding anastomotic leaks, which occur when the bowel doesn’t heal properly after it has been reconnected. We found that intra-operatively, after a surgeon makes a connection, he or she should test the connection to see if it leaks in any way. Some surgeons thought that testing the connection wasn’t very useful, but we were able to show how important this step was in creating a proper connection. By building an evidence basis for this practice through the outcomes database, we showed that it is a highly effective practice. In addition, we have used our data to compare results of procedures that can be performed in a variety of ways. Our hope is to develop an understanding of which techniques are best suited for various clinical scenarios.

What are you working on now?
A number of projects have been developed from this data, including analysis of readmission, urinary tract infection, surgical site infection, as well as postoperative ileus, which is functional bowel obstruction after surgery. For instance, Colon and Rectal Surgery has one of the highest readmission rates among all surgical procedures, and we have a project evaluating why these rates are so high. In addition, we are looking at the epidemiology of diverticulitis and its causative factors, as well as ileus and the length-of-stay after surgery. All of our projects are geared toward providing our patients with the best possible medical care so that we can provide evidence-based treatment.
16  Education: Alzheimer’s Intervention
18  Education: Practice Makes Perfect
19  Clinical Research: Patient-Centered Research Promises Better Outcomes
21  Clinical Research: The Art and Science of Liver Imaging
25  Clinical Innovation: A Holistic Approach to Care
26  Clinical Innovation: Bronchial Thermosplasty
ALZHEIMER’S INTERVENTION

PROGRAM HELPS FAMILIES LEARN TO COPE WITH MEMORY DISORDERS

Deborah Coletti first suspected something was wrong when her husband, Noel, made mistakes paying their bills. He would pay one bill five times but neglect to pay others altogether. He struggled with organization and forgot how to do simple things on the computer—strange for a successful software marketing executive.

Deborah and Noel learned he was suffering from early onset Alzheimer’s disease when he was only 52 years old. Noel functioned well at home alone for several years. But eventually Deborah became worried when she noticed he would forget to eat lunch, couldn’t keep himself occupied, and seemed depressed.

“I had to keep working,” she said. “So, what can we do to be sure Noel continues to be as happy, healthy and productive as he can be in spite of this terrible disease?”

As Deborah started looking into programs that would help her care for Noel, she was disappointed and left several tours in tears. But then she found Spectrum Adult Day Health Program, a service of Lahey Health Adult Day Services.

“I was anxious about visiting, but it was like night and day,” she said. “At the time, he was very capable of doing a lot. They said, ‘He’s going to be our volunteer. He can help move furniture and change the water bubbler. We’re going to give him work to do because that’s what makes him feel good about himself.’”

Staff members at Spectrum responded to Noel’s unique needs as a young Alzheimer’s disease patient by creating therapeutic activities specifically for him. He gave tours, helped prepare food and assisted the other, much older, participants. The increased productivity boosted Noel’s self-esteem, Deborah said, and his depression improved.

MAXIMIZING POTENTIAL

The Spectrum programs in Beverly and North Andover offer habilitation therapy—a type of therapy that focuses not on regaining lost skills but on engaging remaining abilities to create a state of psychological well-being. The programs keep individuals with memory disorders active and engaged to maximize their functionality, reduce stress and help them feel fulfilled through therapeutic activities, such as art, music and day trips, along with health and supportive services and socialization.

While the services can’t slow or halt the progression of disease, they can minimize frustration and challenging behaviors, allowing participants and families to enjoy life together.

“Family members typically come to us overwhelmed by the care needs of their loved one,” said Lisa Orgettas, Executive Director of the Spectrum Adult Day Health Program in Beverly. “They very quickly find that Spectrum benefits not only the person with the memory disorder but also the family as well.”

Every aspect of the Spectrum programs is tailored to meet the needs of patients with memory disorders. Staff have specialized training, and facilities feature bright lighting because research indicates that people with memory disorders need twice as much light to see with the same visual acuity as peers without memory disorders. Registered nurses help manage chronic conditions, such as diabetes, administer medications, and
liaise with primary care physicians. That extra medical attention helps prevent unnecessary hospitalizations.

Daily activities include exercise programs, arts, musical performances, field trips and video chats with relatives. Participants can also access a specialized computer system that provides entertainment, cognitive exercises and wellness programs designed for seniors. The key in programming is ensuring a failure-free environment, meaning the successful completion of the craft or game is not the point of the activity. For participants, being confronted with their inability to perform tasks can trigger negative emotions and behaviors.

“We are creating an environment where people can feel as successful as possible, whatever that might look like,” Orgettas said.

Spectrum also offers services to the families of individuals affected by memory disorders, including support groups and education around managing challenging behaviors and improving communication.

“As language starts to fail, there are a lot of ways to approach communication incorporating positive body language,” said Orgettas. “We teach this to families so they can have an easier time interacting with their loved one.”

The program enables many families to continue caring for loved ones at home, delaying or preventing the need for an assisted living facility or nursing home. In fact, 47 percent of discharges from the Beverly program last year were due to the participant passing away at home. The Beverly program has been so successful in its 21-year history that a second program opened in North Andover in 2011.

Adult day health programs can be extremely effective for individuals with memory disorders and their families because they offer nursing supervision, cognitive training, meals, social interaction and support for relatives, said Paul Raia, PhD, vice president, professional-clinical services at the Alzheimer’s Association, Massachusetts/New Hampshire Chapter.

Emerging research does point to the possibility that cognitive training, such as art therapy, might help the brain create connections between previously unconnected neurons effectively establishing detours around disease-damaged neural pathways, Raia said. Adult day health programs have grown more sophisticated in recent decades to include more of these cognitively stimulating activities, he said. While it’s unclear if there might be any scientific benefits to such programs, adult day health programs that offer habilitation therapy remain an effective choice because they emotionally benefit patients a great deal, he said.

“In this context, the best treatments we have are the treatments that go on at adult health day programs,” Raia said. “The goal is to maximize the person’s potential, minimizing all the challenging behaviors. That is truly treatment for the disease. By the time the person goes home to the family, they’ve had a full day and lots of positive emotion.”

For the Colettis, the benefits are enumerable. Though Noel’s disease has progressed and his abilities have declined during the time he has been attending, Noel still looks forward to going to Spectrum each day so he can see friends and participate in activities, Deborah said. Spectrum has served as a vital resource at every stage of her family’s Alzheimer’s journey, she said. As Noel begins to struggle with tasks like getting dressed or dining in a restaurant, staff members have offered strategies for navigating those situations. The couple’s three adult children, who have struggled with the progression of their father’s disease, have benefited from support services offered through Spectrum as well.

“I know that they’re there for me for the long haul for this disease,” she said. “And they’ll be able to adapt to whatever my needs and Noel’s needs are.”

/ Vanessa Hill
PRACTICE MAKES PERFECT

STATE-OF-THE-ART SIMULATION CENTER KEEPS BEVERLY HOSPITAL NURSES AT THE CUTTING EDGE

Rhonda Rapids cries out from her bed in the mother-infant unit.

“I…I can’t breathe,” she says in a frantic whisper. “Help me.”

Forty-eight hours after delivering a baby by cesarean section, Rapids’ heart rate, respiratory rate and blood pressure all rise as her oxygen saturation declines, clear signs of respiratory distress. A team of nurses rushes over and begins to examine the patient. They launch into action to save her life.

As the nurses work, Rapids’ oxygen levels rise and her other vital signs stabilize. Crisis averted.

There is one unusual aspect to the dramatic event that just unfolded—it wasn’t real. The entire scenario took place in Beverly Hospital’s 1,500-square-foot Nursing Simulation Education Center, which opened in November 2011. Rapids is a state-of-the-art simulation mannequin who can cry, sweat, bleed, speak and foam at the mouth. It has all the same physiological functions of a human, which are controlled by a computer located behind a one-way-mirrored control booth. The voice today was that of Sara Barnum, MSN, RN-BC, a geriatric nurse educator, speaking into a microphone in the control room.

On this particular day, obstetric nurses practice scenarios related to high-risk pregnancies. To make the simulation as realistic as possible, midwives and obstetricians are also in attendance.

Beverly Hospital delivered 2,200 babies in 2013, and OB nurses receive mandatory annual trainings. Judith Michaud, MSN, RN-BC, the simulation coordinator and clinical educator, oversees the simulation lab, which was funded by the Evelyn Lilly Lutz Foundation and Peter J. Lappin, a private donor. It features six patient bays, high-tech audio-visual equipment, training scenarios, technology to mirror real hospital experiences and simulation manikins of all age ranges. There’s a 6-month-old SimBaby, two twin 6-year-olds, two adults and a geriatric manikin. Nurses practice scenarios on different manikins, depending on their specialty.

“It really gives educators tremendous insight into the nurses’ competency. Then we can do immediate remediation if needed, which is very powerful,” Michaud said.

Educators review recent rapid responses as well as stats on fall rates, infection rates and patient satisfaction scores at the hospital to help determine the scenarios for the yearly trainings. In one program for newly graduated nurses, the scenario helps the novice nurses confront their two most common fears—communicating with doctors and the death of a patient.

To make the simulation more multi-disciplinary and life-like, the scenario includes pastoral staff members. After all scenarios, nurses discuss their critical thinking with educators and receive feedback on their performance. Powerful anecdotal evidence already points to its effectiveness. For example, after a recent simulation training on diagnosing sepsis, a potentially life-threatening complication of an infection, a nurse shared a story of detecting the condition early, potentially saving the patient’s life, Michaud said.

The Nursing Education Simulation Center was initially used for orientation of newly hired registered nurses, clinical associates and the New Graduate Nurse Program. Simulation has now been expanded to include a pediatric advanced life support course and the on-going competency assessment of the various nursing specialties, including pediatric, maternal/child care, critical care, telemetry and peri-operative.

“People really see the value of experiential learning,” Michaud said. “This kind of teaching strategy really rings true to people’s core.” / Nick Pandolfo

Obstetric nurses practice scenarios on the infant-sized simulation mannequin, one of six mannequins in the Beverly Hospital Nursing Simulation Education Center, which opened in May 2011.
While the United States spends significantly more per capita on healthcare than any other nation, it lags behind in important health measures, such as infant mortality and life expectancy.

Theories that poor health outcomes are due to high rates of smoking, obesity, traffic fatalities and homicides were disproven by experts at Columbia University’s Mailman School of Public Health, leading analysts to focus on flaws in the health system itself.

One flaw researchers uncovered is the significant variation in the distribution of medical resources, documented in the Dartmouth Atlas of Health Care. For example, in 2005-2006, Medicare enrollees who suffered from osteoarthritis were five times more likely to have hip replacement surgery if they lived in Ogden, Utah, than if they lived in Bryan, Texas. In 2007, physicians in St. Petersburg, Fla., performed carotid endarterectomies—a surgical procedure to remove plaque from the carotid artery—at a rate that was about 63 percent higher than the national average.

Studies show that higher volumes of care do not necessarily produce better outcomes. Simply put, more care is not better care. Variations in care are closely tied to the local ecology of care, meaning the local capacity and payment environment. Wide variations in practice mean that some patients are getting care they don’t need—with the inherent risks and dangers, particularly if it involves surgery—and some are not getting care they do need. In addition to the troubling clinical implications, this also points to considerable waste in the healthcare system, at a time when the country can ill afford it.

To help address this culmination of problems, in 2003 Congress issued a mandate to the Agency for Healthcare Research and Quality to support comparative effectiveness research—the generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent,
“Lahey Health’s Comparative Effectiveness Research Institute (CERI) will bring powerful decision-making information to Lahey Health’s physicians and patients and to physicians throughout the United States and the world.”

diagnose, treat and monitor a clinical condition or to improve the delivery of care. And in 2009, the American Recovery and Reinvestment Act allocated $1.1 billion for new comparative effectiveness research.

**EMPOWERING PATIENTS**

Lahey Health’s Comparative Effectiveness Research Institute (CERI) will bring powerful decision-making information to Lahey Health’s physicians and patients and to physicians throughout the United States and the world. Led by Zoher Ghogawala, MD, chair of neurosurgery, and Frederic Resnic, MD, chair of cardiovascular medicine, CERI will directly compare the effectiveness of different surgical, conservative and pharmaceutical treatment options, giving patients and their providers’ new information about the relative benefits, risks and value of the choices before them.

The Alan L. Stuart and Jacqueline B. Stuart Spine Research Center is the first major initiative of CERI. Efforts are currently underway to develop a national prospective spine outcomes registry that will generate data on the comparative effectiveness, safety and costs of nonsurgical and surgical treatments for spinal disorders. Lumbar spine disorders represent an enormous burden on society. U.S. national surveys show low back pain is the fifth most common reason for all physician visits in the United States. The rising economic costs associated with lumbar spinal disorders in the United States are now estimated to exceed $100 billion per year.

Moreover, cervical spondylotic myelopathy (CSM) is the most common spinal cord disorder in adults over 55 in the United States. It results from chronic compression of the spinal cord and nerve roots, impairing blood flow and causing neurological problems. Debate has raged for decades over the best treatment for this common problem. While some patients’ conditions may improve spontaneously, most will require surgery to improve and/or arrest further deterioration.

There are several surgical options: decompressing and fusing the spine from the back (dorsal surgery); decompressing and fusing the spine from the front (ventral surgery); and decompressing from the back without fusion (laminectomy alone or laminoplasty). Researchers have had difficulty interpreting results from past studies because the study populations have varied, so controversy and uncertainty continue to surround these procedures. Learning which surgical technique is best for which type of patients will help improve outcomes and quality of life for patients with CSM.

Another aspect of this research measures cost-effectiveness. Dorsal decompression and fusion costs $26,773; ventral compression and fusion costs $21,319; and laminoplasty costs $10,249. Currently, there is no good comparative data to guide patients and physicians as they attempt to choose among these options.

Comparative effectiveness research may also show that the more expensive surgery is best in some or even most circumstances. But if research demonstrates that certain patients in certain circumstances will benefit equally from an operation that costs 80 percent less than the alternative, it would be hard to justify recommending, performing, or paying for the more expensive procedures. While an important shift toward patient-centered outcomes in healthcare has occurred since the passage of the Affordable Care Act, only a handful of centers are currently focused on this important area of research.

In April, Lahey Health convened its second symposium and patient advisory meeting of its new Comparative Effectiveness Research Institute. The symposium was funded by patient participants Alan L. and Jacqueline B. Stuart, who have taken a lead role in both philanthropic support for the creation of the Spine Research Center and advocacy for patient-centered outcomes research more broadly, and brought together patients, research experts and clinicians to generate, prioritize and design comparative effectiveness research projects across specialties.

Last September, CERI received three research awards totaling more than $3.1 million to study effective treatments for cervical spine disease and medical device safety surveillance, including a $2 million grant from the Patient-Centered Outcomes Research Institute, a grant from the National Institutes of Health, and a $1.1 million grant from the U.S. Food and Drug Administration.

The Alan L. Stuart and Jacqueline B. Stuart Spine Research Center is funded by the generous support of Alan L. and Jacqueline B. Stuart. In March, Dr. Ghogawala’s work was featured in an article, “A Registry of Upper-Spine Surgical Outcomes to Guide Patient Decisions,” in The Wall Street Journal.
Lahey Hospital & Medical Center team leads national trial to improve donor liver allocation

An increasing demand for a small supply of donor livers has prompted Lahey Hospital & Medical Center physicians to conduct a national trial aimed at determining a better strategy for distributing donated livers to those most in need.
A variety of causes are driving the growing need for transplant livers. In the 1990s, physicians and scientists discovered that this surgery was more beneficial than originally thought for early-stage liver cancer patients. In addition, cases of liver diseases, such as hepatitis C, cirrhosis due to alcohol use and other forms of hepatitis, have continued to climb. More recently, a condition known as fatty liver—a syndrome characterized by elevated liver enzymes, obesity and diabetes—is projected to add to the demand for donor livers.

“In the United States, 16,000 people are waiting for liver transplants, and less than 7,000 can expect to receive one,” said Elizabeth Pomfret, MD, PhD, FACS, chair of Lahey Hospital & Medical Center’s Department of Transplantation and director of living donor liver transplant program.

The scarcity of donors has drawn new attention to the way potential recipients are prioritized on the transplant waiting list, and it’s forced medical professionals to explore new options for patients awaiting transplant, including a living donor liver transplant. Live donor liver transplantation is made possible by the fact that the liver, unique among human organs, can regenerate. When part of a liver is taken from a live donor for transplantation, the donor’s remaining liver segment will regenerate to its original size, while the transplanted segment regenerates to a size determined by the recipient’s body type.

Lahey Hospital & Medical Center began offering adult live donor liver transplants in 1999. Its program, the largest in the United States, saves lives while taking the strain off the expanding list of people who compete for a precious liver from a deceased donor.

FOR SOME, AN IMAGING SCAN DEFINES A SPOT ON THE WAITING LIST

Approximately 20 percent of liver transplant patients have liver cancer, usually hepatocellular carcinoma (HCC), the most common type. Unlike others who are placed on the transplant waiting list—maintained by the Organ Procurement and Transplantation Network (OPTN)/United Network for Organ Sharing (UNOS)—those with cancer typically depend on the results of an imaging test to become listed for liver transplantation. These patients are then re-evaluated every 90 days to ensure that their disease has not progressed beyond acceptable limits so they are given appropriate priority on the list.

“In imaging is the best way to detect liver cancer early, which is when patients benefit most from a transplant,” said Christoph Wald, MD, PhD, executive vice chair, Department of Radiology. “Unlike with cirrhosis, for example, in most cases we cannot detect or quantify liver cancer through a blood test.” Liver biopsy, which carries a risk, is performed only in selected cases.

But there are also challenges with this diagnosis tool. In 2006, researchers reviewed the national liver transplant database to determine how often liver cancer diagnoses made with an imaging scan matched what was actually found when the diseased liver was removed during transplant. “In less than half of cases did the earlier interpretation of the degree of liver cancer match reality,” Dr. Wald said. “In some cases, the diagnosis of liver cancer was wrong; in others, radiologists underestimated the amount of disease present. Many of those patients who had advanced cancer, would have been better served by another form of treatment, and should not have received a donor liver.”

Accurate results require highly sophisticated imaging equipment, me-
Liver imaging can be used to diagnose liver cancer and place patients on a waiting list for a donor liver.

Liver imaging can be used to diagnose liver cancer and place patients on a waiting list for a donor liver. The difficulties associated with making a liver cancer diagnosis through imaging have serious implications. Historically, one-fifth of liver transplantations were carried out based on a potentially flawed imaging diagnosis. "Imaging accuracy is important because patients with liver cancer diagnosed by imaging alone receive increased priority on the liver transplant waiting list," said Dr. Pomfret, who is on the OPTN/UNOS board and served as chair of its Liver and Intestinal Transplantation Committee when the 2006 study findings were published. "This increased priority could potentially result in an unfair advantage for these patients versus those awaiting transplantation without a diagnosis of cancer." She and others organized an interdisciplinary conference to assess how livers were allocated in patients with liver cancer.

Representatives from the 50 most active U.S. transplant centers attended a national liver cancer consensus conference that took place in 2008. Dr. Pomfret co-chaired the conference, Dr. Wald co-chaired the imaging workgroup, and they coordinated the effort to summarize the recommendations, which included developing a new, comprehensive approach to liver imaging. "We developed minimum equipment specifications, a standardized imaging protocol, a structured approach to reporting and a standardized and highly prescriptive way to diagnose liver cancer using the images from contrast-enhanced CT and/or MRI scans," Wald explained. "We also requested that these images be interpreted by expert radiologists working at UNOS-accredited transplant centers." Their findings were published in 2010. The new policy was accepted by the UNOS board in 2011 and was just implemented in late fall 2013.

Still, questions remained. "At about 40 percent of liver transplant centers, CT scans are considered to be the standard of care for liver imaging," Dr. Wald said. "Evidence suggests that MRI may, in fact, be the superior choice for imaging. Because of differences in cost, radiation exposure and, potentially, the diagnostic performance of these two tests, it behooves us to figure out which is superior—CT or MRI. And because we want to determine if our new imaging policy is better than the old one, or if any changes are needed, we initiated the largest-ever interdisciplinary liver imaging trial in..."
Managing Patients with Liver Disease

Imaging Plays a Key Role

Fredric Gordon, MD, Medical Director of Liver Transplantation and Hepatology

The liver is a complex organ when it’s healthy. Once it becomes diseased, it can wreak havoc on the body. Fredric Gordon, MD, medical director of liver transplantation and hepatology, says that fastidious liver imaging is key to providing high-quality care to patients.

“Approximately 40 to 50 percent of our Liver Center patients have cirrhosis and thus are at risk for developing liver cancer,” Dr. Gordon said. “We know that about 2 percent of them will develop cancer each year, so we have two annual scans performed—an MRI and an ultrasound—in order to monitor them.

“Imaging is critical for other reasons; we need to check for ascites—abnormal accumulation of fluid in the abdomen—as well as the size of the spleen and the presence of blood clots,” he explained. Lahey Hospital & Medical Center’s Liver Center provides state-of-the-art care for the diagnosis and management of all liver conditions. Dr. Gordon and his colleagues offer novel therapies for the treatment of chronic hepatitis and liver failure, as well as the complications of cirrhosis and portal hypertension.

Dr. Gordon is optimistic that improved treatment for hepatitis C will mean fewer individuals will require a liver transplant. On the other hand, non-alcoholic steatohepatitis (NASH)—also known as fatty liver—concerns him. “This syndrome, which tends to occur in middle-aged, obese individuals with diabetes and hypertension, causes elevated liver enzymes,” he said. “We are seeing more NASH cases, and we believe that 8 to 12 percent of them ultimately will need a transplant. They will represent a larger portion of the donor list.”

The national study for which he, Dr. Wald and other Lahey Hospital & Medical Center physicians serve as investigators is important, he said. “As a physician, when I tell someone that they have a liver tumor, I need to be sure the diagnosis was made using clear criteria.”
A HOLISTIC APPROACH TO HEALTHCARE

UNIQUE SENIOR ADULT UNIT TARGETS TREATMENT FOR MIND AND BODY

Paul Mehlman always considered her mother, Virginia Sohn, 78, to be a brilliant and dignified woman. That’s part of the reason it was so difficult to watch her struggle with persistent memory loss, the signature symptom of dementia. Sohn was aware she was losing control of her mind and that caused depression and added confusion. Mehlman wasn’t sure how to best help her mother.

The physical challenges of aging are commonly known, and healthcare providers offer a variety of medical treatments to keep elders physically healthy. But sometimes, that’s not enough. Approximately 20 percent of people over the age of 55 experience mental health concerns—the most common of which is depression, according to the Center for Disease Control and Prevention.

Addison Gilbert Hospital’s Senior Adult Unit (SAU) is a highly regarded program that provides older patients with a holistic approach to medical and mental health care, in one inpatient setting. Now celebrating its 10th anniversary, the unit’s approach was ahead of its time when it opened in 2004.

“The Senior Adult Unit is an integration of all the services we provide at Lahey Health—both acute behavioral services and sub-acute medical services,” said Michael Tarmey, RN, clinical director of Inpatient Behavioral Services at Addison Gilbert and Beverly Hospitals and director of BayRidge Hospital, all members of Lahey Health.

The average patient stay on the floor is 10 days, Tarmey said. Patients don’t need to have a mental health diagnosis prior to being admitted to the floor. In fact, patients most often visit the hospital for another medical condition, such as a urinary tract infection, and are placed in the unit after demonstrating combative, aggressive or emotional behavior.

Sohn received surgery at Beverly Hospital for diverticulitis, and she was admitted to the SAU for recovery. Mehlman raves about the care her mother received and the support the staff provided, specifically nurse practitioner Robert Henriques, APRN.

“Robert immediately recognized that my mother is brilliant, elegant and dignified, and was mortified and terrified of this disease that takes away those attributes,” Mehlman said. “It was so comforting to me to have somebody that understands that, who honors that and treats her that way still.”

The unit’s success is due to its focus—functionality—and the staff who work tirelessly to provide patients with care that meets their overarching needs, said Shirley Conway, director of Geriatric Initiatives for Lahey Health.

“While they are here, the patients are up and moving. If needed, they are receiving physical therapy, and interaction with other patients and our interdisciplinary team,” Conway said. “It’s all about engaging, and reviewing medications to ensure what people are on is appropriate. That could mean adding or decreasing medication to help with their emotional issues.”

On any given day, patients might enjoy visiting dogs as a form of pet therapy, or an informational presentation from a gardener on tricks of the trade. They can express feelings and frustrations through art and can request pastoral counseling for spiritual help.

“It’s not just taking care of older adults,” said Steven Gillepsie, the SAU’s medical director. “It’s taking care of a very unique population of adults.”

While the patient benefits from the care, it’s the patient’s family that often receives the greatest benefit. The Senior Adult Unit team provides families with education and planning assistance to prepare for the loved one’s return home. Families may also find support in satellite services at Lahey Health Senior Care and Lahey Health Behavioral Services to ensure a smooth transition for their relative.

Since returning home, Mehlman’s mother has been taking her medication, sleeping better at night, and is noticeably happier and more peaceful. Mehlman said her mother’s emotional condition has become much more manageable, and she credits the SAU for making such a difference in their lives. / Christine Kenney

AWARD-WINNING CARE

In November 2013, the Senior Adult Unit (SAU) received the Guardian of Excellence Award from Press Ganey—a healthcare performance improvement organization that surveys patients about their experiences at U.S. hospitals—for earning a score of 95 percent or greater in patient satisfaction for the year. The SAU also won the 2011 and 2012 Summit Awards from Press Ganey for receiving patient satisfaction scores 90 percent or greater for three years in a row, respectively.
For three decades, severe asthma controlled nearly every daily decision made by Christine Zonce. It seemed that her asthma-related symptoms were intensifying each year despite using more and more medications. Every medication prescribed to asthmatics failed to prevent emergency room visits and did little to alleviate her constant feeling that she could not catch her breath.

“I couldn’t do a lot of activities that I wanted to do for any length of time because I just didn’t have enough air,” said Zonce, who was a competitive ballroom dancer for 12 years. “I felt like I was breathing through a straw. As I got into my 50s, my asthma really started to slow me down. My quality of life was not good at that point. I was constantly going on and off prednisone as the drug of choice, and it was controlling me.”

Two years ago, Carla Lamb, MD, director of Interventional Pulmonology at Lahey Hospital & Medical Center, told Zonce about bronchial thermoplasty, a new procedure for which Dr. Lamb has recruited patients as part of a multicenter clinical trial. Bronchial thermoplasty is the first non-drug therapy approved by the Food and Drug Administration (FDA) for patients 18 years and older whose asthma is not well controlled with inhaled corticosteroids and long-acting beta-agonist medications.

During the procedure, Dr. Lamb guides a bronchoscope into a patient’s airways, delivering thermal energy to the airway wall.

“The procedure causes reduction in the bulk of the smooth muscle that is located in the smaller airways and is responsible for the bronchoconstriction and resulting bronchospasm,” Dr. Lamb said. “This hyperactivity of smooth muscle seen in patients with moderate to severe persistent asthma may be triggered by a number of external factors, such as exercise, an external inhaled substance, infection, perfume, chemical or cleaning agent droplets.

“The procedure reduces smooth muscle in medium-to-small airways, which makes patients less prone to have bronchial constriction and therefore less exacerbations of their asthma.”

The procedure is considered safe in patients with moderate to severe persistent asthma who meet the criteria for treatment. After the completion of the three-step procedure, asthma patients typically suffer fewer asthma attacks and need fewer hospital visits or the use of rescue in-
“It’s a paradigm shift in treatment—it’s really a change about how we think about treating asthma.”

Bronchial thermoplasty reduces the bulk of the smooth muscle located in the smaller airways, which causes constriction and spasm.

It’s a paradigm shift in treatment—it’s really a change about how we think about treating asthma. Dr. Lamb said. “We don’t expect to see a marked improvement because they have inflammation from the procedure,” Dr. Lamb said. “But in the one-to-two-week follow up, I’ve had patients who begin demonstrating the best PFTs they have ever had in their entire history of their asthma. We’re seeing that patients are maintaining a sustained level of improved function.”

In an initial five-year study to evaluate the effectiveness and safety of bronchial thermoplasty, researchers at Washington University School of Medicine found that compared with a control group, bronchial thermoplasty patients experienced fewer severe exacerbations, as well as an 84-percent reduction in emergency department visits and a 66-percent drop in the number of days missed from work and school.

“I’ve had every single asthma drug made for asthma over 30 years,” Zonce said. “Personally, any help that anyone can get for asthma is a great thing, especially if that means that there are better alternatives to medications that cause harmful side effects.” / Megan Youngblood

If you are a patient with severe persistent asthma and would like to learn if you qualify for the bronchial thermoplasty procedure, contact the Asthma Center at 781.744.2620.

halers. They have overall improved control of all of their asthma related symptoms while remaining on their maintenance medications.

A BETTER LIFE
In June 2012, Zonce completed the minimally invasive bronchoscopic procedure, which involved three outpatient procedure visits scheduled approximately three weeks apart, each treating a different area of the lung.

“It is the first time in 30 years that I can breathe and feel wonderful, and not need prednisone or my rescue inhaler,” said Zonce, who hasn’t needed her rescue inhaler or emergency care since the procedure. “I’m actually shocked that I feel this way and so pleased and happy. It’s a wonderful thing.”

As part of the FDA’s approval of the procedure, physicians must complete a five-year post-approval study of 300 patients to determine its long-term safety and effectiveness. Dr. Lamb began enrolling patients in 2010; those patients who have completed treatment successfully are experiencing similar results to those described by Zonce. Enrollment in the study recently closed, but Dr. Lamb will continue to offer the procedure to new patients who meet the criteria while she continues to evaluate participants in the study.

“We find that the patients with severe asthma sometimes have more anxiety about the prospect of bronchoscopy because for years we were taught that you should avoid performing a bronchoscopy on an asthma patient unless you absolutely had to,” said Dr. Lamb, who was one of the first physicians in New England to offer the procedure. “It’s a paradigm shift in treatment—it’s really a change about how we think about treating asthma.”

Dr. Lamb and the Asthma Center team at Lahey Hospital & Medical Center comprise a multidisciplinary group of specialists of allergy, pulmonology and clinical pharmacy who medically manages each patient carefully before deciding whether or not a patient should undergo the procedure. Even if a patient does not move ahead with bronchial thermoplasty, the Asthma Center assessment is typically beneficial in identifying other opportunities to improve disease management. Once selected for bronchial thermoplasty, a patient undergoes pulmonary function tests (PFTs) the morning of the procedure and the patient is reassessed throughout the series of treatments.

“During the day of the procedure, we don’t expect to see a marked improvement because they have inflammation from the procedure,” Dr. Lamb said. “But in the one-to-two-week follow up, I’ve had patients who begin demonstrating the best PFTs they have ever had in their entire history of their asthma. We’re seeing that patients are maintaining a sustained level of improved function.”
A VISION FOR

HEALTHCARE

Lahey Health is what’s next in healthcare
When Howard Grant, JD, MD, arrived at Lahey Clinic in 2010 as the president and chief executive officer, he knew that the organization needed to evolve. A rapidly destabilizing global economy and the changing healthcare environment accelerated the need for change and growth. That same year, President Barack Obama signed into law the Patient Protection and Affordable Care Act (PPACA)—the most significant government expansion and regulatory overhaul of the U.S. healthcare system since the Centers for Medicare and Medicaid Services (CMS) were established in 1965.

The sweeping legislative changes started to significantly change the way providers are reimbursed for medical services, and their implementation set off a ripple effect across the nation. At Lahey Health affiliates and other healthcare organizations across the country, leaders re-evaluated their business models and worked to identify ways to improve quality and reduce costs. Meanwhile, mergers between healthcare providers skyrocketed as leaders tried to adapt to the new laws.

Four years later, leaders at Lahey Health continue to work toward building an organization that will succeed in this new era of healthcare, through new partnerships and investment in programs that will bring enhanced quality to the institution.

At Lahey Hospital & Medical Center, Dr. Grant first focused on delivering results in improved quality, reduced variations in care, and better value associated with the costs of care—all to improve the patient experience and outcomes. In two years, Lahey Hospital & Medical Center staff delivered on these goals, achieving a top decile national ranking in core measures for patients receiving all recommended care, an improvement from a top quartile ranking in 2010. Healthcare providers also achieved gains in all 10 patient experience measures, which include patient satisfaction scores in areas, such as communications from caregivers, pain control, and information provided at discharge. Lahey Hospital & Medical Center was also the lowest-cost academic medical center nationally in 2012, according to the University HealthCare Consortium.

Secondly, Dr. Grant sought new partners. “Prior to the enactment of the Affordable Care Act, many healthcare organizations and private practices would have liked to remain as they were—indepen-dent,” Dr. Grant said. “Dramatic changes in the marketplace, including the recent explosion of accountable care organizations, mean that there are benefits to keeping patients in specific networks, and we must build our network of primary care physicians to gain more patients within our system.”

Indeed, America’s healthcare infrastructure includes thousands of stand-alone community hospitals and private physician practices that can become—and probably must become—part of a fully integrated health system that provides a continuum of services across all aspects of care. By joining larger systems, these groups become sustainable because they can share the enormous costs of medical and information technology—costs which they can no longer afford on their own.

Additionally, the PPACA stipulated that Medicare reimbursement would be tied to quality, safety and patient satisfaction scores. The new hospital value-based purchasing program rewards hospitals based on the quality of services provided, rather than the quantity of services provided. Measures of quality include, for example, the percentage of heart attack patients given Percutaneous Coronary Interventions (or given medicine to open the blockage) within 90 minutes of arrival, the percentage of patients who received a prophylactic antibiotic within one hour prior to surgical incision, and the patient satisfaction rating of how well caregivers explained the steps patients and families need to care for themselves outside of the hospital. CMS reimbursements to hospitals are based on performance relative to other hospitals, as well as a hospital’s own improvement over time. That means organizations delivering the highest quality care and highest patient satisfaction will receive larger reimbursements than low performers. Its immediate impact has been a nationwide wave of mergers and acquisitions that continues today as hospitals seek sustainability through growth.

The trend began almost immediately after the law passed. The number of hospital mergers shot up more than 45 percent from 2009 to 2010—from 53 to 77, according to Irving Levin Associates, a firm that tracks mergers and acquisitions in the healthcare industry. In 2012, the number of hospital system mergers grew to 105, and as of August 2013, 46 mergers had occurred in just eight months.

This trend is evidenced by the newly established Lahey Health, an affiliation of Lahey Clinic and Northeast Health System, which brought together like-minded organizations to provide better, more reliable care to a larger population. The Lahey Health network now spans the entire northern Boston metro and southern New Hampshire area, providing primary care in 26 communities.
and specialty care with partners in Concord, Derry, Nashua and Portsmouth. Acute care services include Addison Gilbert Hospital in Gloucester, Beverly Hospital in Beverly, BayRidge Hospital in Lynn, Lahey Hospital & Medical Center in Burlington, Lahey Medical Center in Peabody and soon Winchester Hospital in Winchester.

“We are in discussions with a variety of healthcare organizations, including private physicians whose practices are contemplating joining larger systems in order to better manage the dynamic changes that will likely accompany the new healthcare model,” Dr. Grant said.

In September 2013, the Board of Directors of Winchester Healthcare Management, parent of Winchester Hospital, and the Lahey Health Board of Trustees voted to enter into an affiliation agreement. Winchester Hospital, a 229-bed hospital, offers comprehensive healthcare services in the northwest suburban Boston region. Winchester Hospital has 20 clinical locations in nine towns throughout northeastern Massachusetts. In addition to acute-care inpatient services, Winchester Hospital also provides an extensive range of outpatient services as well as integrated home care.

“Lahey Health and Winchester Hospital will make a great healthcare team,” Dr. Grant said. “Two innovative organizations are aligning to create a comprehensive network of locally respected primary care physicians and nationally recognized specialists.”

A NEW OPERATING MODEL

As of January 2014, CMS has selected 366 health systems to serve as accountable care organizations, and Lahey Health is among them. An ACO is an incentive-based healthcare model that gives patients access to the full continuum of services through a network of physicians, clinics, community hospitals, surrounding a tertiary care center and teaching hospital. ACOs encourage primary care physicians to provide team-based, proactive care and provide greater opportunity for physicians to share clinical expertise to solve the most difficult medical cases across the system.

As an accountable care organization, Lahey Health is shifting its model of care from fee-for-service to value-based contracting by managing all patients across the entire spectrum of health, from those who are well to those with the most complex conditions. Within the ACO, physicians are leaders of high-performance care teams that share responsibility for patient care with other members of the team. Caregivers work collaboratively across disciplines to share information seamlessly, to provide the right care in the right setting, to reduce duplication of tests, to minimize unnecessary use of expensive resources, to focus on keeping patients with chronic conditions healthy and out of the hospital, to provide preventive care, and to understand and manage population risk.

The more lives cared for by an accountable care organization model, the more a health system can mitigate the risk of caring for patients with complex and costly care needs. In some ways, larger organizations that can aggregate more lives are at a potential advantage compared to very small organizations. However, large systems like Lahey Health tend to take care of the most complex patients, and their patient population is significantly sicker than most in the community.

With these challenges, Dr. Grant said that in managing costs more efficiently, we must eliminate waste without compromising the quality of care.

“An excellent example of this is the implementation of guidelines around blood transfusions at Lahey Hospital & Medical Center,” he said. “Before these guidelines, healthcare providers tended to err on the side of transfusing more often than scientific evidence suggests is necessary or safe for patients. Since we implemented criteria around blood transfusions, we have improved quality of care and reduced expenses by $1.6 million for the year.”

“I firmly believe that this is exactly the model of care that is needed in our region today,” said Gregory Bazylewicz, MD, chief network development officer of the Lahey Clinical Performance Accountable Care Organization for Lahey Health. “I can say without question that our communities will benefit from the health-care system that Dr. Grant and his team are building; and we all have a bright future together. I’m excited to be part of it.”

A FORWARD-THINKING LEADER

For the past 28 years, Dr. Grant has led change in clinical improvement, clinical performance, patient safety and the successful integration of clinical operations across multiple hospital organizations—again all to improve patient experience and outcomes. In November 2013, he was the recipient of the Arthritis Foundation’s Dr. John I Sandson Lifetime Achievement Award, an honor recognizing him for his lifetime of dedication to improving the well-being of others.

A pediatrician and lawyer by training, Dr. Grant is a respected leader renowned for his transformational roles at some of the nation’s most preeminent healthcare institutions, including Geisinger Health System in Danville, Penn., Temple University Health System and the Children’s Hospital in Philadelphia. His interest in medicine originated during his work with the Public Defender Service at a psychiatric facility in Washington, D.C., during law school. He helped to represent psychiatric patients in civil commitment proceedings, which
ultimately led to his desire to combine his legal training with medical education and training.

While rising through the ranks in health system administration, Dr. Grant has continued his connection and devotion to the individual patient. His sincere desire is to shape an exceptional patient experience, ensuring that every patient benefits from the same level of compassion, respect, clinical expertise and efficiency that he would want for a member of his own family. Dr. Grant asks every Lahey Health leader to begin every meeting with a focus on quality of care and patient experience. This focus is what propels Lahey Health forward today.

Dr. Grant began his medical career at the Children's Hospital of Philadelphia, where he developed and managed home care programs for children suffering from chronic diseases. At a time in the 1980s, when very few organizations made concerted efforts to afford families the opportunity to care for extremely ill children in their homes, he never forgot his role as an advocate and pushed until he was successful in implementing programs that enabled children requiring long-term ventilator care and sophisticated IV therapy for cancer treatments and other chronic diseases to receive treatment in the comfort of their homes, with patients, siblings and friends nearby.

At Temple University Health System, Dr. Grant was responsible for patient population care and the integration of clinical and operational programs across five facilities that improved care for patients with complex needs in a community that faced grave socio-economic challenges. Dr. Grant developed innovative strategies to encourage greater continuity in the care of patients with chronic diseases. He also bought vans to travel the streets of north Philadelphia and provide transportation to women experiencing high-risk pregnancies so that they would have access to consistent pre-natal care. The result was a decrease in incidence of premature deliveries, as well as the long-term complications, family distress and costs associated with premature newborns.

Later, at Geisinger, Dr. Grant was charged with aligning clinical operations with Geisinger Health Plan, a nonprofit insurance company. He championed the aggressive introduction of medical homes in all of Geisinger’s primary care practices with major investments in those sites to assure that optimal care could be delivered to the sick, and to patients from all walks of life. Hospitalization rates, emergency department visits and costs of care declined dramatically. More importantly, patients felt more secure and safe in their care, and clinicians reported much greater gratification in their participation in the care model.

“Before coming to Massachusetts four years ago, I was quite content in my role at Geisinger Health System in rural north central Pennsylvania,” Dr. Grant said. “But when I was contacted by a search firm about the chief executive officer role at Lahey Clinic, I discovered that Lahey was a jewel of an organization. I was equally intrigued with the commitment that the Commonwealth of Massachusetts had made to provide healthcare to all residents.”

Although eastern Massachusetts is extraordinarily fortunate to have superb quality of care, Dr. Grant said, our region's cost of care is much higher than most comparable communities.

“I have come to appreciate throughout my career that it is eminently achievable to deliver higher quality care at lower costs. We know that for any given population, it is common for 20 percent of those individuals to consume 80 percent of healthcare cost,” Dr. Grant said. “We can identify and support the most complicated patients, we will create better care and ultimately more cost-efficient care.”

Throughout Lahey Health, we are addressing this challenge. We are investing in strategies to prevent illness, proactively identify and diminish risk, and maintain healthy lives, such as building our team of care managers to provide special attention to patients in need, implementing a state-of-the-art electronic health record, and integrating mental and physical health services throughout our practices.

Dr. Grant’s vision to increase the breadth and depth of services through strategic partnerships north of Boston, in turn improving care coordination of our patient population, will give patients access to high-quality, high-value care without having to travel very far for it. His strategy of working together effectively, collaborating on innovative solutions for the betterment of the patient, has brought together our providers throughout Lahey Health to improve care in all of the communities we serve. With this vision, Lahey Health is building what’s next in healthcare.

**WHAT IS AN ACO?** An ACO is a group of providers and suppliers of healthcare services (e.g., hospitals, physicians and others involved in patient care) who, under the Medicare Shared Savings Program (MSSP), and other insurers, work together collaboratively to deliver care to a population of patients; agree to be accountable for the quality and cost of care for a defined group of service beneficiaries (the ACO’s “assigned beneficiaries”); and share in savings (and potential losses) associated with the care for those assigned beneficiaries. The ultimate goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors.
MEETING THE MOST URGENT NEEDS OF OUR COMMUNITIES
Lahey Health’s success as a leading health system in New England not only depends on providing the best value of care, but also the safest, highest quality healthcare to every single patient across the entire system; increasing its capacity to care for an even greater number of patients; attracting excellent partners; and pioneering innovative ways to be more efficient to sustain the unique physician-led model that has always characterized its practice.

As Lahey Health gains more affiliates, it will establish Lahey Hospital & Medical Center, Burlington, as the tertiary and emergency hub for the entire health system. Considering this, the organization’s most pressing priority, which will support all of these goals, is the building of a new Emergency Department.

This expansion is a critical step in enabling the Burlington hospital to treat a growing, more geographically dispersed, and higher acuity patient population. This need reflects the facility’s ongoing transformation from a standalone hospital and medical center to the flagship, tertiary and emergency hub for a new integrated health system: Lahey Health, formed with the 2012 affiliation of Northeast Health System and Lahey Clinic.

In the more than 30 years since it opened, Lahey Hospital & Medical Center’s Emergency Department has evolved into a vital provider of complex and lifesaving emergency care in the region.
“Each day, we know we have to be prepared for anything. We know that our specialists are prepared to take care of anything. We make sure our equipment is ready and we make sure our team is ready,” said Malcolm A. Creighton, MD, chair of Emergency Medicine. “Our plans for a new Emergency Department will ensure that we are prepared for the future. It will touch so many people.”

Approximately 110 patients are seen in the Emergency Department each day, often arriving with multiple medical conditions and generally sicker than those treated at other facilities. Because of its location adjacent to several major highways, the Emergency Department cares for a wide range of trauma patients, including victims of motor vehicle accidents and people who have fallen. Lahey Hospital & Medical Center experiences an unusually high percentage of Emergency Department admissions, as high as 37 percent—more than two times the national average.

As a Level II Trauma Center accredited by the American College of Surgeons and a Certified Stroke Center, the Emergency Department has specialized physicians available 24 hours a day, 7 days per week. With this depth and breadth of expertise on call, the hospital can handle serious injuries to the head, spine, lungs, liver, spleen, bowel and extremities.

Built in 1980 to accommodate 17,000 annual patient visits, today the Emergency Department in Burlington treats more than 18,000 patients each year, and its volume is projected to grow to more than 47,000 annual patient visits over the next decade. Already, the department has seen significant upticks in transfer patients from other Lahey Health affiliates. In the 2013 fiscal year, more than 170 trauma patients were transferred from Beverly and Addison Gilbert Hospitals, more than four times the number that were transferred in the 2011 fiscal year.

The envisioned Emergency Department will provide tertiary emergency care to communities north and west of Boston, accepting referrals from affiliates of Lahey Health for major surgery, critical care and urgent consultations. It will be expanded to 43,500 square feet, nearly four times its current size, on the site of the current unfinished “stilts” structure at the southwest corner of Lahey Hospital & Medical Center, Burlington. Its ample, attractive and carefully configured clinical space will fully leverage the incredible talent and training of Lahey Hospital & Medical Center caregivers—allowing this team to deliver a patient experience unlike anything possible in the current facility.

“We need to do what we need to do in the Emergency Department in an environment that allows us to get it done,” said Dr. Michael Rosenblatt, MD, MPH, MBA, director of trauma service.

**MULTI-SPECIALTY CARE SAVES PATIENT’S LIFE**

Before a near-fatal accident brought him to the Emergency Department at Lahey Hospital & Medical Center, Burlington, John “Jack” Rego had only read about the hospital in the newspaper. Today, he thinks of the doctors and nurses there as family.

Rego, a truck driver from Raynham, Mass., was hauling a piece of heavy equipment in Burlington on Dec. 30, 2010, when a state trooper stopped him to examine his cargo. As
Rego adjusted the equipment, a 20,000-pound counterweight slipped and trapped him between the equipment and the chains supporting it.

“I was in a panic and I was yelling ‘Help me out! Help me out!’” Rego said, sitting on the edge of the sofa in his living room with his wife, parents and two of his six daughters. Rego’s last memory of the accident is a paramedic in the ambulance mentioning he was going to Lahey Hospital & Medical Center. He passed out from loss of blood and wouldn’t wake up for three weeks.

While the rescue team was trying to figure out how to remove the counterweight, the pre-hospital team was in constant communication with the hospital, where the trauma team was assembling a team of specialists who would evaluate and treat Rego. The blood bank, interventional radiology room and operating room were all prepared for Rego’s arrival.

The trauma team had their work cut out for them: Rego suffered an open femur fracture on his left leg, multiple fractures in his pelvic bone and several broken vertebrae in his back. His popliteal artery, which supplies blood to the knee joint, the calf and thigh, was severed. He had no pulse in his lower left leg and had lost a massive amount of blood. His kidneys were failing. They intubated him immediately, transfused him with six units of blood, and the trauma team had Rego in the Operating Room within 45 minutes.

In trauma medicine, the first hour after a patient suffers a traumatic injury is referred to as the “golden hour.” Treatment occurring within the golden hour has not only life-saving, immediate implications, but also impacts a patient’s long-term recovery levels, said Michael Kain, MD, the orthopedic surgeon on call when Rego arrived.

“Within that golden hour, he had general surgery, orthopedic surgery, urological and vascular surgery all working on him,” said Dr. Kain. “What happened with him early on in getting early intervention allowed him to be as functional as he is now. Otherwise he would have prosthetics. He’s pretty much why you go into being a doctor.”

While his family gathered at the hospital, a team of five physicians operated on Rego for more than seven hours. The team included Harold Welch, MD, a vascular surgeon, David Bryan, MD, a plastic surgeon, Alireza Moinzadeh, MD, a urological surgeon, and trauma team members including Dr. Kain and John Wei, MD, a trauma surgeon. Multiple nurses and surgical residents also assisted. The procedures performed included fasciotomies—lacerations made down the calf—which helped release the immense pressure that was building up in Rego’s lower leg.

“I pulled into the Emergency Department and I started to panic,” said Joyce Rego, Jack’s wife. “But there was never a time through the whole process that they left me alone. If it wasn’t a nurse helping me call family, it was a doctor consulting with me. They took such good care of us.”

The quick response from a broad range of specialists was a critical element in saving Rego’s life. It would be nine months before Jack left his hospital bed, and even longer before he took his first unassisted steps.

Now three years after the accident, Jack Rego still makes regular trips to Lahey Hospital & Medical Center, Burlington, for routine checkups. He won’t go anywhere else. The difference—now he can walk in.
ideas

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FIRST-PERSON NARRATIVE

I am the product of the proverbial American Dream. I was born in the Philippines during the 1950s and came to the United States at a very young age with my parents. My father had just graduated from medical school and my mother from nursing school. They knew no one in the United States and had very little money, but my father had been accepted to an internal medicine residency program in Michigan and began pursuing his dream to be an American-trained physician.

Adjusting from a tropical climate to the cold and snowy winters of the Midwest was just one of the challenges my parents faced as immigrants adapting to a new culture. After my father completed his training, they decided to stay in the United States instead of returning to the Philippines as they had originally planned. That decision determined, in large part, my life’s course.

Because of my parents’ influence, healthcare became the family business. My father was a general internist and my mother, a nurse. My sister, Celeste, is a nurse anesthetist and educator in San Francisco and my brother, Wayne, is a neurosurgeon in Louisville, Ky.

After my father finished his training, we moved to California, where I grew up. My father initially had a private practice, but a few years later in 1964, he decided to join Southern California Kaiser Permanente, which is now one of the largest managed care organizations in the United States. I didn’t realize it then, but he was among a small minority of physicians who decided to join a group practice in which doctors were salaried and not paid fee-for-service. I remember him explaining to me how a health maintenance organization (HMO) worked and remember thinking how it made sense to have a system that encouraged wellness and resource allocation. I realized that it was not a perfect system, but the basic principle of being part of an integrated multispecialty group practice appealed to me even if it wasn’t a concept taught in medical school or post-graduate training.

After graduating from the University of California, San Diego School of Medicine in 1980, I spent my post-graduate training at Boston University as a medical resident, chief resident and pulmonary fellow, where I had the pleasure of working with future Lahey Hospital & Medical Center leaders, such as Judith A. Melin, MD, MA (Executive Director and Associate Chief Medical Officer, Workforce Health for Lahey Health) and Chris Ying, MD (Chair, Nephrology).

When I completed my pulmonary and critical care medicine training, I looked for job opportunities, mainly at academic medical centers, and chose to join what is now Lahey Hospital & Medical Center. Surprised by my decision, my program director asked me, “Why would you want to go there?” The expectation for someone like me, trained in a Boston academic medical center, was to join an academic faculty, establish a basic science research career, and climb the academic ladder. I knew that I wasn’t interested in that career path, but I also wasn’t interested in starting a private practice. Lahey Hospital & Medical Center seemed perfect for me: a physician-led, multispecialty group practice (similar to Kaiser in that way) and a teaching hospital that would give me the opportunity to do clinical research.

When I first started in 1988, the most common question I was asked by patients was, “Are you old enough to be a doctor?” That year, by the way, was a very good recruitment year—the class also included Guy Napolitana, MD, and Gary Cushing, MD, who are now respectively chairs of the Departments of General Internal Medicine and Endocrinology, Diabetes & Metabolism at Lahey Hospital & Medical Center.

I know I made the right choice in coming to Lahey Hospital & Medical...
Center and can hardly believe that I’ve been here for more than 25 years. As a physician, I’ve had the opportunity to work with and learn from fabulous clinicians, front-line caregivers, residents and fellows, educators and clinical researchers in striving to provide the best patient care we can deliver. I’ve also had the opportunity to learn about and practice leadership in this physician-led organization. I’ve had the honor of serving on the Board of Governors and, currently, on the Board of Trustees.

I have learned a great deal in my time at Lahey Hospital & Medical Center. As a provider, I’ve learned much from my patients and colleagues and will continue to do so. But I’ve also learned from life experiences. All of us, at one time or another, will be either patients, family members of patients or friends of patients, and will have first-hand experience of healthcare delivery on the receiving end. Since joining Lahey Hospital & Medical Center, I’ve had those experiences more than I would have ever imagined. My mother-in-law died of ovarian cancer at the age of 58, my father-in-law died of a sudden cardiac arrest, my father died from complications of leukemia, my mother died of uterine cancer, my sister-in-law died of ovarian cancer at the age of 46, my other sister-in-law was treated for breast cancer (she is a cancer survivor), my brother-in-law suffered a skiing accident that left him paraplegic, and many close colleagues have been stricken with life-threatening illnesses. From such experiences, one learns what’s good about our healthcare system and what needs improvement. I personally learned the importance of patients having their own personal advocates since they are often too ill to advocate for themselves when it’s most needed.

A very personal tragedy struck my own immediate family in May 2010 when my wife, Denise, was diagnosed with ovarian cancer. We sought second opinions about treatment options from the Brigham and Women’s Hospital and Dana Farber, and decided to have her care at Lahey Hospital & Medical Center, a place she trusted because she had been a patient here for many years. Despite what I still believe to be the best treatment and care she could have received, she succumbed to the disease only nine months after diagnosis. Many of my close colleagues were involved directly or indirectly with her care and were so supportive of her—and me—during a very difficult time. We witnessed and experienced professionalism, responsiveness and compassion throughout her care at Lahey Hospital & Medical Center.

My connection to purpose as a physician continues to be expecting the best care for my family—my daughter, Kristin, who now lives in Brighton and remains a Lahey Hospital & Medical Center patient, and my son, Matt, who lives in New York City. I want to know what any parent wants: to be assured that the health of my children and their children will be maintained and that, if they should ever become ill, they would receive the best possible care whether or not I was around.

Andrew Villanueva, MD, delivered this speech before more than 500 of his colleagues at a Lahey Health leadership conference in 2012. He is the interim chief medical officer of Lahey Hospital & Medical Center and was previously the chair for the Department of Pulmonary and Critical Care Medicine for the past seven years.
Community Program Serves as a National Model
For decades, there has been impressive progress in diagnosing and treating many types of cancer. The glaring exception is lung cancer—the most deadly form of cancer in both men and women—mainly because there has been no effective way to screen those who are considered to be at risk.

Chest x-rays often fail to find tumors at their earliest, most treatable stage. As a result, five-year survival for those diagnosed with lung cancer is a grim 15 percent—about the same as in 1971, when the United States announced its war on cancer. Each year, lung cancer kills more people than breast, prostate, colon and pancreatic cancer combined.

But there is hope. A new screening tool has shown remarkable results in detecting lung cancer early. The results of a 10-year National Cancer Institute (NCI)-sponsored study of the National Lung Screening Trial in 2011 revealed that using low-dose CT scans to screen current or former heavy smokers cuts lung cancer death by 20 percent.

“It’s very sad to treat people with stage 4 lung cancer,” said Andrea McKee, MD, chair of Radiation Oncology at Lahey Hospital & Medical Center, “because they’re suffering, and they’re dying. Now that we have a chance to detect lung cancer early, we can send many of our patients for treatment and potentially a cure.”

Lahey Health decided to take a leadership role, pioneering a program to offer free screenings to at-risk patients in January 2012, well before the U.S. Preventive Services Task Force, which determines the therapies and tests that must be covered under the Affordable Care Act, decided to require insurance companies to cover low-dose CT scan screenings for lung cancer in December 2013.

“This is the biggest issue in oncology today,” Dr. McKee said. “The NCI study showed that, by screening, we can shift the curve—that is, diagnose 70 to 80 percent of high-risk individuals when they are in stage 1, which is associated with a 10-year survival in a screened series approaching 90 percent. That’s the goal.

“People know if they are at risk,” Dr. McKee added. “Finally, they’ve been given a tool to do something about that risk. That’s all anyone wants: if you are going to develop cancer, you want it detected early.”

A TOOL THAT SAVES LIVES

After the results of the National Lung Screening Trial were announced, hospitals everywhere wondered how to implement a screening test that has proven to be as effective, if not more effective, than mammography is for detecting breast cancer. Presented with an opportunity to save lives, staff at Lahey Hospital & Medical Center organized a program to offer free screenings to at-risk patients. A large steering committee formed and set several goals, including that Lahey Health would assume a leadership position on this important public health concern.

One of the first steps was to establish a standardized system that radiologists could use to report CT lung screening findings. The system, called “Lung-RADS,” is modeled on Lahey Hospital & Medical Center’s protocol for mammography. Committee members set up a database; defined protocols for follow up, whether or not abnormalities are found on the scan; and created standard letters to patients and physicians—everything needed to launch an effective pilot program. On January 9, 2012, Lahey Hospital & Medical Center began providing free screenings, starting with employees.

During the first few months, the team screened about 200 individuals and detected several lung abnormalities. Patients were referred to pulmonary specialists as needed. “The program isn’t ‘one test and you’re done,’” said Brady McKee, MD, a Lahey Hospital & Medical Center radiologist who specializes in chest radiology and has reviewed most of the program’s CT scans. After the first scan, participants are

ARE YOU AT RISK FOR LUNG CANCER?

Lahey Health is offering free low-dose CT lung screening to individuals considered to be at high risk for lung cancer because of their smoking history and who meet the following criteria:

**GROUP 1**

**BETWEEN AGES 55 and 74**

Currently a smoker or have quit within the past 15 years

Have smoked at least a pack of cigarettes a day for 30+ years

**GROUP 2**

**BETWEEN AGES 50 and 74**

Have smoked at least a pack of cigarettes a day for 20+ years

Have one additional lung cancer risk factor, not to include secondhand smoke exposure

IF YOU THINK YOU MIGHT QUALIFY

please call Lahey Hospital & Medical Center at 1.855.CT.CHEST
between 8:30 am and 4:30 pm, Monday through Friday, to schedule an appointment.
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Encouraged to schedule their next one, whether it is with a Lahey Health facility or another provider.

CT technology has evolved during the past decade to become safer, he noted. “A low-dose CT lung scan exposes someone to very little radiation—about the same as a mammogram. That is because today’s scanners are very fast, and we use new software to reconstruct the image, which reduces the dose even further.” It’s one of the easiest screening tests, he added. “All people need to do is hold their breath for seven seconds. They don’t even need to change their clothes.”

By spring 2012, Lahey Hospital & Medical Center’s senior management made the commitment to expand free lung cancer screening to the public for five years or until the Centers for Medicare and Medicaid Services endorse coverage. Today, the program has expanded across the system. As of March 2014, Lahey Health had completed more than 2,200 scans and detected at least 29 cases of lung cancer. Lung screenings are offered in Burlington, Peabody, Danvers and Gloucester.

Lahey Hospital & Medical Center also hosted seminars and workshops focused on establishing lung screening programs, which have been attended by many organizations from around the country. The program team developed a CD that contains relevant documents, the Lung-RADS system, database and other materials to help others launch screening programs.

Program leaders emphasize to participants and referring physicians that an individual who is screened is not obligated to return to a Lahey Health facility for any further screenings, for further evaluation of any finding or any other services that Lahey Health provides.

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Approximately 10 years ago, the National Cancer Institute launched the National Lung Screening Trial (NLST) to determine if low-dose CT scans were effective at diagnosing lung cancer early. Here are the facts:

Participants were randomly assigned to receive either free low-dose CT scans, which expose the individual to far less radiation than a diagnostic CT scan, or free standard chest x-rays.

The NLST was halted early when it became clear that low-dose CT scans are associated with a 20 percent reduction in deaths from lung cancer.


About 15 percent of those who are diagnosed with lung cancer have never smoked. The results of the trial do not answer the important question of how to minimize lung cancer in non-smokers.
DOING THE RIGHT THING—AND THE SMART THING

Dr. McKee has also conducted outreach to groups that have additional risk factors for lung cancer, including firefighters, because of smoke inhalation, and military personnel, because of exposure to toxins, such as Agent Orange and battlefield combustibles. She has traveled to Hanscom Air Force Base in Bedford to meet with the staff. “We also have reached out to area fire departments, including in Burlington, and encouraged the staff to take advantage of our free screening,” said Dr. McKee, who spoke before a crowd of 500 at a meeting of the Professional Firefighters of Massachusetts.

“There is definitely a lot of interest among firefighters, because until now, the ability to screen for lung cancer has been limited,” said Brian Barry, a firefighter who serves as union president in the Danvers Fire Department. “Most firefighters don’t smoke, because we know we’re already at higher risk. As careful as we are, as much as our equipment has improved, we’re exposed to hazardous materials, whether we’re in the firehouse or out fighting a fire.”

Veterans are also disproportionately affected by lung cancer. A recent event at Addison Gilbert Hospital allowed veterans to sign up for free lung screenings, and Doug Conrad was among those who participated. Conrad, a Vietnam veteran who was also a firefighter in Danvers for 30 years and smoked for almost as long, learned about the free program from his wife.

Two weeks after his screening, Conrad received his results. His scan showed no problems. “For the price of nothing and a couple hours of my time, I got a clean bill of health, at least for my lungs, anyway,” Conrad said, “which in my profession is pretty good.”

In providing free lung cancer screening, Lahey Health’s primary goal is to improve health and wellness in the community, but a recent study shows the screenings may have other implications. A recent actuarial analysis in Health Affairs demonstrates that offering lung cancer screening as an insurance benefit would save lives at high-value coverage, with a screening costing about $1 per insured member per month. In that regard, the screening program is an example of efficient system innovation.

After more than a year of lobbying by radiologists and others around the country, including Dr. McKee, the decision by the U.S. Preventive Services Task Force to require coverage for the screening represents a victory for leaders like Lahey Health, who pioneered free lung screening programs.

“This is exactly what our hopes were and the reason behind the movement,” said Stacey Scott, who served as the patient navigator for the lung cancer screening program at Lahey Hospital & Medical Center. “Now over nine million people in the United States will have access to a potentially life-saving mechanism.”

Gordon Green credits Lahey Hospital & Medical Center with saving his life.

Green, who lives with his wife, Denise, and four children in Billerica, Mass., began experiencing chest pain in September 2012, so he scheduled an appointment with his primary care physician, James Kolb, MD, at Lahey Health Primary Care, Arlington.

During the visit, Dr. Kolb asked Green, who had smoked heavily for a number of years, if he would like to participate in a study underway at Lahey Hospital & Medical Center looking at the benefits of low-dose CT lung screenings for patients at a higher risk of developing lung cancer. Just two hours after his screening, Dr. Kolb called Green, with news that they found a spot on his left lung. The next day, Green saw pulmonologist Carla Lamb, MD, who scheduled a PET scan. The scan confirmed the spot was a tumor, which was later determined to be malignant.

“Before [the chest pain] I had no idea. I felt fine,” Green said. “There were no symptoms whatsoever, no indication that I could have lung cancer or any kind of cancer for that matter.”

Thoracic surgeon Christina Williamson, MD, performed surgery to remove the top third of Gordon’s left lung along with the surrounding lymph nodes. The surgery was a success and Green has made a full recovery.

“I consider myself the luckiest guy in the world that this scan was offered to me,” Gordon said. “I’d be walking around today with lung cancer and not even realize it, and probably by the time I did realize, it would be too late.”
Zoe Richard and Kayla Bello, third graders at Centerville Elementary School in Beverly, Mass., pause at a black cart on wheels in the cafeteria. They've just grabbed their lunch of grilled cheese, and it's time to add some color to their tray. The cart is packed with various fruits and vegetables. Bello grabs a pair of tongs and places three pieces of broccoli and two red pepper slices onto her plate. Richard opts for a small pile of cucumbers.

“It’s great. You can get a salad whenever you want,” Bello said, “with crispy lettuce or peppers and dressings and other stuff.”

This fruit and vegetable bar was part of the first phase of a campaign coordinated by the Greater Beverly YMCA in partnership with Beverly Hospital and several other community organizations to reduce obesity in the community. The campaign, called Be Healthy Beverly, is designed to curb obesity rates by promoting healthy foods to elementary school children. Program leaders hope encouraging nutritious food choices at a young age will help instill healthy habits that last a lifetime.

The program is funded through a grant from the Center for Disease Control and Prevention (CDC) and Y-USA, aimed at addressing health needs. The CDC provided funding to 10 YMCA groups nationwide. Those associations then partnered with other community organizations to identify a need and develop a program-
matic or policy change in response. The Greater Beverly YMCA teamed with Beverly Hospital as its main partner because of its strong ties to the community, said Greater Beverly YMCA Executive Director Judith Cronin.

“We’re thrilled to be able to play an active role in this community-wide initiative and help local children live healthier, more active lives,” said Gerald MacKillop, director of community relations at Lahey Health and co-chair of the Be Healthy Beverly program.

The group looked to Beverly Hospital’s 2009 community health needs assessment to identify a health challenge to tackle. Respondents had reported high rates of obesity (59 percent), lack of physical activity (76 percent) and inadequate consumption of fruits and vegetables (81 percent). The analysis revealed increased rates of diabetes, hypertension and high cholesterol—all linked to obesity—in Beverly as compared to the rest of Essex County and the state. These numbers were even higher for low-income residents.

Across the nation, obesity has reached epidemic levels, and the resulting health problems are well documented. Obese individuals are at risk for developing a number of serious health problems, such as diabetes, high blood pressure, heart disease, stroke and certain types of cancer, according to a report from the Office of the U.S. Surgeon General. Obesity among children, while showing a decline with young children 2 to 5 years old according to a recent CDC report, remains a serious issue for older children. Rates of obesity have more than doubled since 1980 for 6- to 11-year-olds and more than tripled for adolescents aged 12 to 19, according to the CDC.

Reports also show a strong link between elevated body mass index (BMI) in childhood and obesity in adulthood. BMIs at Beverly-area schools have been creeping upwards, program participants said, mirroring nationwide trends. The CDC has also encouraged schools to take an active role in helping children make healthy food choices.

“After looking at the stats, we decided to focus on prevention rather than treating problems after they’ve already occurred,” Cronin said. “Going to the youngest citizens is absolutely the best way to get in front of future problems.”

Students at all five elementary schools in Beverly can choose from broccoli, carrots, cucumbers, spinach, raspberries, along with a variety of other fruits and vegetables at the child-height bar.

Since the fruit and vegetable bars
were installed during the 2012-13 school year, participation in the school lunch program has risen, MacKillop said. In an effort to further introduce students to healthy eating, school nurse Joyce Prior, RN, instituted “Taste Test Tuesday,” a program where one vegetable or fruit is featured in every classroom for students to try. Once a month, a registered dietician from Boston Children’s Hospital, another Be Healthy Beverly partner, hosts “lunch and learns,” to teach students about healthy eating.

The second phase of the initiative, a set of raised vegetable beds at each elementary school, launched during the current school year with the help of a $10,000 gift from Beverly Hospital and a $5,000 donation from the Greater Beverly Chamber of Commerce.

Local nonprofit Green City Growers, of Somerville, built three vegetable beds at each elementary school, making it the largest program of its kind on the North Shore. The horticulture nonprofit sets up and breaks down the gardens, but students do the harvesting as a part of the social studies, science and math curriculum that Green City designed for third graders. The harvested vegetables are then served at the vegetable bar in the cafeteria.

“It’s been a huge success and the students really look forward to [the vegetable bar],” said Karla Pressman, the principal at Centerville Elementary School. “They are beginning to understand the connection between healthy eating and learning.”

While the CDC funding for Be Healthy Beverly has been exhausted, Beverly Hospital signed on to fund the garden maintenance so that the program can continue.

“It’s the least we can do to keep such an important program like this from going away,” MacKillop said. “Now future classes can benefit from the program and contribute to a healthier Beverly community.” / Nick Pandolfo

The percentage of children aged 6–11 years in the United States who were obese increased from 7% in 1980 to nearly 18% in 2010. Similarly, the percentage of adolescents aged 12–19 years who were obese increased from 5% to 18% over the same period.
Obese youth are more likely to have risk factors for **CARDIOVASCULAR DISEASE** such as high cholesterol or high blood pressure. In a population-based sample of 5- to 17-year-olds, **70% of obese youth** had at least one risk factor for cardiovascular disease.

In 2010, **more than one third** of children and adolescents were overweight or obese. Children who are overweight or obese as preschoolers are **5 times as likely** as normal-weight children to be overweight or obese as adults.

1 in 8 preschoolers is obese in the U.S.
For the past 19 years, Paul Cotran, MD, an ophthalmologist at Lahey Hospital & Medical Center, has volunteered his time to help eliminate preventable blindness among the poor in El Salvador, calling it one of the most important commitments of his life. Each winter, supported by the Global Outreach program, Dr. Cotran leads a group of Lahey Hospital & Medical Center physicians, optometrists, registered nurses and operating room scrub technicians to El Salvador, treating patients living with poor vision and debilitating eye diseases.

Global Outreach at Lahey Hospital & Medical Center enables physicians and other healthcare professionals to travel to developing countries to offer free medical clinics. Dr. Cotran, who specializes in treating patients with cataracts and glaucoma, knows the devastating effects of these diseases. With the aid of generous contributions from donors to the Global Outreach program, Dr. Cotran and his team of volunteers are able to provide clinical expertise to a population of patients who would otherwise not have access to ophthalmological care. A combination of dedication, compassion and commitment by volunteers, as well as the funding for travel expenses by Global Outreach, make missions like Dr. Cotran’s possible.

The Lahey Hospital & Medical Center team joins in partnership with Asociación Salvadoreña Pro-Salud Rural (ASAPROSAR) and a large team of ophthalmologists, anesthesiologists, nurses, optometrists and translators, to help the people of El Salvador by offering vital eye care for seven days. Each year, volunteers treat more than 2,000 patients, conducting 25 consultations per hour and performing more than 20 surgeries each day.

According to the World Health Organization, 90 percent of the world’s visually impaired live in developing countries, and 80 percent of all visual impairment can be avoided or cured. In rural areas of less developed countries, preventable blindness is prevalent due to inadequate health and education services, malnutrition and poor water quality. The greatest causes of avoidable blindness are cataracts, representing 50 percent, and glaucoma, 15 percent. Of the 2,000 patients who visited the clinic in El Salvador in 2012, 84 percent had a household income of less than $137 a month, which classifies them as living in extreme poverty. More than half of the patients lived in rural areas, where eye
care is not accessible. For many of them, this opportunity was life changing.

“There is a public hospital in the area,” Dr. Cotran said, “however no one will go there out of fear of losing their eye sight or contracting an infection due to the unpredictable quality and safety conditions. I would like to run the clinic twice a year to support the demand for eye care in El Salvador but the costs currently exceed the funding available.”

A DEBILITATING PROBLEM
Blindness can be devastating for anyone. However, in a developing country blindness is viewed as a death sentence. Ninety percent of people that become blind in the developing world can no longer work. For families that cannot afford to give the attention and care needed, the person suffering with blindness is neglected. Fathers who once worked in the fields and mothers who cared for the home and sold goods in the market become completely dependent upon the help of others to have their basic needs met.

“Working in El Salvador is one of the most satisfying experiences I have had as a surgeon,” said Susan MacDonald, MD, an ophthalmologist at Lahey Medical Center, Peabody, who has volunteered with Dr. Cotran on three missions, including the mission in February 2013. “The surgical teams are resourceful, enthusiastic and hardworking. Each patient we operated on was legally blind, and this blindness was a burden to the patient and their family. Each of our surgeries restored sight to one person but changed the whole family, allowing other members of the family to return to work or school. It is amazing to see the Lahey El Salvador team in action.”

Cataracts, or the clouding of the lens of the eye, decrease the quality of life and productivity of many people who depend on their sight to provide for their families and function in daily life. While cataracts are more common in older people, anyone can experience them. During a recent mission, Dr. Cotran treated a 2-year-old girl in El Salvador, who was struggling to learn and play normally because she had developed cataracts in both eyes. Because her family could not afford a doctor’s visit, the girl’s eyesight had been worsening over the course of the previous year.

Dr. Cotran operated on the toddler’s cataracts under general anesthesia, and the next day her vision had greatly improved. The family was overjoyed. When Dr. Cotran returned the following year, he was happy to hear from local colleagues that the child was continuing to see well.

As part of ASAPROSAR’s visual health program, Dr. Cotran and volunteers empowered patients with knowledge to combat preventable blindness and educated them about the effects of other chronic diseases that contribute to eye disease, such as diabetes and hypertension. Everyone who visits the clinic receives a pair of sunglasses, and during most campaigns, more than 1,500 pairs of prescriptive eyeglasses are distributed. Patients with glaucoma are treated with laser or medication, and in recent missions, Lahey Hospital & Medical Center ophthalmologists have performed glaucoma surgeries and corneal transplantations.

The success of the medical missions is due to the talented group of people involved. Ophthalmologists and volunteers from several area institutions participate in this mission, but the Lahey Hospital & Medical Center team is the largest and longest serving. The group’s involvement in this mission began with Joseph Bowlds, MD, in 1989. Although now retired, Dr. Bowlds joins the team every year. Other team members include Lisa Chopelas, surgical technician; Yvonne Dady, RN; Gwynn Horsburgh, OD; Janine Raby, RN; Sarkis Soukiasian, MD; Diane Spencer, RN; and Kathy Zager, RN. Another hardworking longtime volunteer is Edward Connolly, MD, who celebrated his 81st birthday during the last mission in February 2014. / Amanda Nelson

| Of the 2,000 patients who visited the clinic in El Salvador, 84 percent had a household income of less than $137 a month, which classifies them as living in extreme poverty. |
HEATHER DINITTO CONTRIBUTES TO THE COLLEAGUE CAMPAIGN FOR HER LOVE OF LAHEY HOSPITAL & MEDICAL CENTER

Compassionate care, meticulously maintained facilities, attentive record-keeping, a friendly smile, a tender touch—employees at Lahey Health connect with patients every day simply by doing their jobs. When employees contribute to our colleague giving campaigns, they make an investment in their own work and further contribute to the well-being of patients.
Since 2006, employees across Lahey Health have raised $3.2 million. Contributions fund extraordinary advancements in facilities, patient care and medical technology and send a strong message about how the staff feels about the institution.

Heather Dinitto, a longtime cashier in the cafeteria at 41 Mall Road and generous contributor, donates every year for her love of Lahey Hospital & Medical Center. Heather loves her job. It’s evident in her voice as she talks about the people who move through her line in the cafeteria every day. And it’s what motivates her to happily commute 160 miles to work at Lahey Hospital & Medical Center, Burlington. But it was a family health crisis that led Heather to fully appreciate Lahey Hospital & Medical Center’s clinical expertise and fueled her desire to make a colleague gift.

WHEN DID YOU BEGIN WORKING AT LAHEY HOSPITAL & MEDICAL CENTER?
I was a stay-at-home mom for many years and decided to apply for a job at Lahey after my children had grown. I was hired as a cashier in food and nutrition services, working part time in 1996. When I moved to Plymouth, I switched to full time.

AND YOU’RE STILL IN THAT POSITION?
Yes, though now I work full time. It’s the perfect role for me—I’m able to ring and talk at the same time! I like getting to know everyone. Sometimes I see families who are confused or anxious, and I try to give them a personal touch, a pat on the arm, and let them know I understand.

HOW WOULD YOU DESCRIBE YOUR RELATIONSHIP WITH STAFF?
It’s a special place here, and I feel connected to everyone. I see a different side of our staff. I know about their husbands, wives and children and the milestones in their lives. I get attached to the residents. I see them come in as young doctors and watch them get engaged, married, and have kids. I see how devoted they are to their patients. I’m sad when they move on.

WHERE IS YOUR HOMETOWN?
I raised my kids, Janet and Tina, in Burlington but moved with my husband, Nick, to a beautiful community in Plymouth in 2003. I’ve been doing the drive from The Pinehills to Burlington for 11 years.

DID YOU EVER IMAGINE YOU WOULD BE MAKING THE PLYMOUTH TO BURLINGTON DRIVE FOR SO MANY YEARS?
I thought I’d give the commute a try. But after just one year, I returned home from work to discover that Nicky had collapsed on the treadmill. He had bypass surgery in 1995 and was healthy after that. He was only 65 and so fit when this heart arrhythmia occurred. The community hospital wanted him transferred to Boston, but I said, “No, take him to Lahey.” He remained there for eight days, in a coma, until he died. The doctors and nurses were so wonderful. Nine years later, I’m still making the drive from the home Nicky and I shared.

WHAT MOTIVATED YOU TO JOIN THE COLLEAGUE CAMPAIGN?
After Nicky passed away, I wanted to give back to for the care they had given him. I started donating when the Colleague Campaign started in 2006. I have seven pins now that I wear on my green cashier’s uniform.

IS THERE ONE AREA YOU HOPE TO HELP WITH YOUR DONATIONS?
Lahey Hospital & Medical Center has grown so much since I started here in the 1990s. I’d like to see more advances in cardiology and cancer research. Contributions to those areas would make a real difference.
I have always tried to be the best I can be in life. I thought this meant getting a good education, being successful at work, and being a good husband, son, brother and friend. I would never have guessed it meant having to battle stage 3B colon cancer in my late 20s.

From the day I received the news, I knew I didn’t have a choice but to fight through whatever the future was about to bring. I never felt sorry for myself or got upset that it happened. My fight was not just for me, but also for the family and friends around me who were greatly affected by my situation. This is where I found my purpose. I knew that cancer would be one of life’s greatest challenges that I would need to overcome. I didn’t have a choice but to stay strong and keep going.

Soon after my diagnosis, I underwent a partial colectomy surgery at Lahey Hospital & Medical Center, Burlington, and after three weeks of recovery, I began chemotherapy treatments. Every day, I became more determined not only to get better myself, but to help others in their fight against cancer. I want to do everything I can to keep others from having this experience, or at least make it a little easier.

I was in my fifth round of chemotherapy when a friend told me about the Lahey Health 5K Cancer Walk & Run, and we decided that it was a great opportunity to give back to those who had helped me so much. With the support of more than 300 of my family, friends and co-workers, we raised $13,500 for the Sophia Gordon Cancer Center, and cancer services across Lahey Health. It was a prime example of my purpose—helping others in any way possible, whether by fundraising, talking to people going through a similar experience, or serving as reminder to get regular colonoscopy screenings to help detect colon cancer.

I am grateful for all the wonderful doctors and nurses including Patricia Roberts, MD; F. W. Nugent, MD; and their teams, who continue to ensure my clean bill of health and consistently make my experience at Lahey Hospital & Medical Center everything I want as a patient.

Tewksbury resident Jim McGinley was diagnosed with colon cancer when he was 28 years old. His fight changed his life and the lives of his friends and family. Together, they formed Team Semi-Colon, (a nod to what remained of Jim’s colon after surgery), and raised thousands of dollars to enhance cancer care for others. Here, Jim shares how cancer defined his purpose.

The 2014 Lahey Health 5K Cancer Walk & Run was held on Saturday, June 7. Visit LaheyHealth5K.org to see the results.
Advance healthcare in our community and around the world.

As a nonprofit academic medical system, Lahey Health depends on contributions from our greatest advocates, as much as patients rely on us for the very best in healthcare. By making a tax-deductible gift to Lahey Health, you can help us advance research and expand treatment options for patients in our community and around the world.

Make a gift online at [Lahey.org/MakeaGift](http://Lahey.org/MakeaGift) or [BeverlyHospital.org/MakeaGift](http://BeverlyHospital.org/MakeaGift).

For more information about ways of giving, contact the Office of Institutional Advancement at 781.744.3333.