It’s All in a Day’s Work
This report is designed to give a glimpse into the medical center’s daily routine. Perhaps it is not appropriate to call it ‘routine,’ because what goes on is anything but routine. Our staff is individually and collectively devoted to alleviating human suffering caused by disease. They are passionate in their cause and tireless in their efforts to make patients and their families feel welcome, respected as individuals, and well cared for. Each day is full of stories of kindness, warmth, compassion, and expertise.

It is therefore no secret as to why we try to treat the staff here with the same degree of respect, warmth, and caring. This is a high-pressure environment, and we constantly seek ways to show our appreciation to the people who work here and to provide an environment for personal and professional growth. We also invite our staff to participate in process improvement, pursuing opportunities to enhance the work environment and make it a safer and more rewarding place to work. Our goals are to help ensure that every person working here has the tools and support to do high-quality work and is recognized for his or her contributions to our important mission.

“As you read through this report, think about the dozens of people who are involved in caring for every single patient. Think about the high degree of skill, experience, and coordination required to deliver the kind of care you expect for yourself, for a family member, or for a friend. But beyond these technical and logistical aspects of care, please remember that our staff is devoted to making each patient’s experience one that they would expect for their own family, a standard of care that defines itself in every thought and action.”
“THE WHOLE IDEA BEHIND TRANSPLANT SURGERY IS WEIGHING RISK AGAINST REWARD. WE’RE TAKING CARE OF PATIENTS IN THE BEST POSSIBLE WAY THAT WE CAN TO MINIMIZE COMPLICATIONS AND MAXIMIZE QUALITY OF LIFE.”

Dr. Douglas Hanto

When it comes to preparing for surgery, Douglas Hanto, M.D., Ph.D., is pragmatic. As chief of transplantation at Beth Israel Deaconess Medical Center, performing hundreds of operations each year, he knows the importance of focusing on the essential and setting aside the extraneous. “I always prepare from a medical and surgical standpoint, making sure I’m familiar with the patient’s history and that I remember all the details that are important for performing the procedure and that may affect any intraoperative decision-making,” he says. “But I don’t have any rituals or superstitions such as wearing lucky socks or anything like that,” he adds with a soft laugh.

Hanto might be practical when it comes to patient care, but he’s far from conservative. Building one of the premier abdominal transplant programs in New England doesn’t come about by playing it safe. Since taking over as chief in 2001, Hanto has created a comprehensive and collaborative enterprise that has adopted innovative techniques and strategies to enhance outcomes for transplant recipients while at the same time developing ways to use an expanded pool of organ donors in the region. “I’m a bit of a risk taker,” he says. “When it comes to helping patients, I’m willing to stretch things.”
Luckily, Hanto found an environment at BIDMC where his practical and daring sides can not only coexist in harmony but work to his advantage. He says that the institutional buy-in, the intellectual prowess, and the can-do attitude that permeate the medical center have allowed BIDMC’s Transplant Institute to create the standards and systems that are transforming the field. “Everybody here is willing to do things differently. They aren’t stuck in the way of doing things from five, 10, 15 years ago,” says Hanto. “People are always willing to reexamine what we’re doing to try to do it better.”

Along these lines, Transplant Institute staff recently developed more than 25 distinct and detailed clinical treatment plans, or “pathways,” that describe the comprehensive course of care for transplant recipients and living donors from referral and evaluation through long-term follow up. A unique pathway designed specifically for patients also explains what they should expect every step of the way. “We’ve really thought analytically about how we care for patients and how to best manage that care—and we’ve put that down on paper,” says Hanto, who intends to publish the pathways so other transplant programs can benefit from this unique resource. He believes that the paradoxical result of codifying the process has been the ability to spend more time treating patients as individuals—and more time to take on riskier cases without compromising superior results.

When it comes to surgery, pushing the envelope can come with great rewards. “There’s nothing like taking out a liver and putting in a new one and seeing a patient go from death’s doorstep to being restored to full health,” says Hanto. “I sometimes forget how really amazing what we do is.” Ensuring that more people can have this type of life-saving experience has become a big part of the Transplant Institute’s mission. By strategically accepting extended-criteria and post-cardiac-death donors to shorten recipient wait times and by improving education to debunk myths about the field, the Institute has increased the availability of organs. And it’s been just as innovative on the recipient side. The Institute is leading the way in making pancreas transplants for patients with diabetes more commonplace, using immunosuppressive protocols to minimize the effects of long-term steroid use. It is also one of only 20 transplant units in the country, and the only one in New England, participating in a National Institutes of Health-sponsored clinical trial of kidney and liver transplantation in HIV-positive patients.

Many of these advances have their origin in basic science, and the unique interdisciplinary structure of the Institute, where scientists and surgeons work in partnership, has encouraged the movement of extraordinary research into the transplant team’s arsenal. “Based on promising results from our labs, we are embarking on preclinical studies that we believe will show that carbon monoxide administered at low non-toxic levels can block the damage caused by organ preservation and improve post-transplant organ function,” says Hanto. “Improving upon what we do takes imagination and collaboration and a willingness to challenge current practices.”

If Hanto seems pretty patient-centric for a surgeon, you’re right. He believes the complex nature of his specialty makes it even more imperative that he build strong relationships with his patients and their families. “When you’re an internist and you make a recommendation, whether it’s physical therapy or taking a medication or modifying a behavior, those are all things that the patient has to do,” he notes. “But when you recommend someone have surgery, they have to lie down, go to sleep, and have you do it to them.” Hanto, however, has tried to make the actual operation the only passive part of the equation for his Transplant Institute patients. By adding orientation classes, a behavioral health program, support groups, and two computer learning stations on site, he believes that they can begin to take charge of their own health and ease their fears about surgery, which he acknowledges can be “one of the most frightening things people can go through.”

Empowering patients, though, doesn’t mean abandoning them. Hanto views himself as an advocate for his patients and has used his position as chief to be remarkably outspoken in his views on some politically sensitive subjects. He has publicly railed against the inherent unfairness of donor matching web sites, applauded efforts to make transplants more accessible to the disabled, and lamented the inequities of the U.S. health care system. Although it can be risky to put yourself on the front lines, Hanto believes it’s his obligation to speak up when patients’ rights are at stake. “On all levels, patient care is challenging,” he says. “And the diseases that we deal with are serious and life-threatening. But that’s, after all, why we’re here.”
The electrocardiogram (ECG)—a visual record of the heart's electrical activity over time—is one of the best ways to measure and diagnose abnormal heart rhythms, or arrhythmias. But interpreting its craggy peaks and valleys can be as much an art as a science. In the soft glow of an overhead projector, Mark Josephson, M.D., chief of cardiology, tries to instill the subtleties of this art in a group of residents and fellows huddled in a darkened conference room on BIDMC's West Campus. "So what's going on here?" he prods, as each "mystery" ECG makes its way up onto the screen. As morning coffees cool, the discussion heats up with the exchange of possible diagnoses and what they might mean for the patient. Even as Josephson commends their insights and points out their mistakes, the students are well aware that they are learning from a doctor who knows more than a little something about abnormal heart rhythms. Credited with transforming the field of cardiac electrophysiology from an intriguing scientific idea to a robust diagnostic and therapeutic tool for arrhythmia management, Josephson is said to have trained more physicians in his specialty than anyone else in the world. "We have to have a legacy in medicine," he says. "Our legacy is our academic children and our grandchildren and the successes that they have. In my mind, that's my greatest contribution."
For surgeon Susan Troyan, M.D., scanning the list of her follow-up appointments for the day is something like getting a birthday present. Seeing the familiar names of patients, who ideally come back to see her only once or twice a year, fills her with anticipation. And while the catch-up sessions always seem too brief, being able to preserve these connections is part of what drew Troyan to her chosen field of breast cancer surgery. “I decided that I wanted to get into a profession where I had more of a long-term relationship with patients, where I wasn’t just taking out an appendix and never seeing them again,” she notes. While getting close to cancer patients remains a daunting proposition for Troyan, even in a field where the mortality rate is relatively low, she says the humanistic approach to care was the only way she ever wanted to practice. “When patients tell me, ‘He’s a really good surgeon, but he has no bedside manner,’ I’m thinking, ‘Then he’s not a really good surgeon,” she says. “The bedside manner is important in really knowing what’s going on with the patient and for being able to communicate with colleagues.”

In her 14 years at BIDMC, Troyan has been pleased to watch its trademark patient-centric ethos infuse the technical component of her field, from surgical techniques to minimize the side effects of tissue damage to the more recent movement toward therapies customized to the patient’s particular cancer. Now that she’s been named director of BIDMC’s Breast Care Program, Troyan looks forward to saying goodbye to the one-therapy-fits-all mentality. With an antiquated reimbursement structure and federal funding at an all time low, Troyan knows she will be forced to get creative in bringing some of her ideas to fruition. But that only makes her more determined. “When you’re trying to answer a question about whether or not your program should do this or that, you always look at: OK, what’s better for the patient? What’s better for the woman or man going through this experience?” she says. “And then it’s a no-brainer—you’ve got to figure out how to make it happen.”
The doctor will see you now

9:32 AM

"Follow my lead."

Neurologist Michael Ronthal, M.D., asks the man seated in the wheelchair beside him: "Did anyone listen to your eye?" When the patient responds that his latest examination didn’t include this particular item, Ronthal proceeds to place his stethoscope gently on the man’s right eyelid—in full view of a conference room of residents. Ronthal has been teaching clinical neurology for almost 35 years, stressing the importance of personal interaction in evaluating neurological disorders. In his innovative "Ronthal Rounds," he is presented with a patient, about whom he knows nothing, by a resident who has done a preliminary examination. Ronthal proceeds to redo the clinical exam in front of the group to make a diagnosis and plan of action without resorting to outside tests. His goal is to train physicians who have such a good sense of their patients that checking for symptoms like ocular bruit—a whooshing noise made by the flow of blood in the eye that may indicate a vascular abnormality of the brain—becomes second nature. "I want these guys to grow up and go out into the world and be great," he says. "Apart from being competent in the physical examination, they have to be able to relate to the patients, and the only way to get that is by example."
The next step is to make sure not only that my women with epilepsy are treated properly here but that at the end of my working career I can say that women with epilepsy in general are treated differently, from the moment of diagnosis through their adult life.

Dr. Babu Krishnamurthy

Neurologist Babu Krishnamurthy, M.D., may have her hands full during her busy clinical hours, but she always seems to have room to take on just a little bit more. As founding director of the Women’s Health in Epilepsy Program (WHE) at Beth Israel Deaconess Medical Center, Krishnamurthy monitors the health of roughly 2,300 female patients with epilepsy using a refreshing yet underutilized approach that keeps her with a waiting list that goes out for months. “My training taught me to look at patients as people first,” she says, “not as a collection of symptoms, not as a collection of diagnoses, but as people who live and breathe and work and have lives.”

The recent college graduate dealing with the stress of too many life changes at once. The mom trying to keep pace with her two active daughters. The retiree worried about osteoporosis. These are the women who crowd Krishnamurthy’s tiny waiting area on the medical center’s East Campus. For her, the fact that they all have epilepsy is secondary to promoting their overall well-being. “This program is about looking at our patients as women with underlying health needs first, even before we look at them in the context of having a medical condition that affects their everyday lives,” she says.

Keeping healthy in the face of life’s daily challenges can be tricky for the more than one million women in this country living with epilepsy, a neurological condition that disrupts the brain’s normal communication patterns to cause seizures. In addition to the physical dangers of the seizures, the systemic effects of the disorder and the medicines used to control its symptoms are further complicated by the unique biological and social circumstances of women, particularly when it comes to reproductive health. When you factor in that epilepsy also has a history of stigmatization and clinical mismanagement, it is not surprising that women with the disease often feel their health and even their overall quality of life are compromised. “Quintessentially, epilepsy is about loss of control,” says Krishnamurthy. “I’m making a broad generalization, but women like to be in control.”
Putting women with epilepsy in the driver’s seat when it comes to their health was Krishnamurthy’s inspiration for her unique program, which she conceived as a neurology fellow at BIDMC. Prior to that time, she had given little thought to gender differences. As an undergraduate electrical engineering major and a medical student, she had always been a minority in a male-dominated world, and besides, she laughed, in school “everyone was treated poorly.” But during her fellowship, Krishnamurthy’s role as a female doctor addressing the particular needs of female patients suddenly came to the fore. She saw that her patients often longed to have children despite their disorder. She understood that their medications could interfere with the absorption of folic acid and calcium, necessary to avoid birth defects and osteoporosis respectively. “It was like a light went on,” Krishnamurthy recalls.

With the blessing of Donald Schomer, M.D., her supervisor and chief of BIDMC’s Comprehensive Epilepsy Center, her idea for WHE became reality in 1997. Despite a notable lack of funding and only word-of-mouth marketing, the one-of-a-kind program became an instant success thanks to an overwhelming need, the boundless energy of its creator, and the collaborative culture of her workplace. “Anywhere else, I’m quite sure there would have been a lot of administrative meetings talking about the mission statement and the logo and why it couldn’t be done,” she smiles, noting that her medical center colleagues, particularly in obstetrics, were on board right from the start. “I think in a lot of institutions you get very bogged down in details that are initially inconsequential. BIDMC is a really unique place.”

Krishnamurthy’s ability to focus on what really matters manifests itself in one of the program’s crowning achievements: babies—or more specifically, more than 160 healthy, happy babies who might have never existed otherwise. In the past, the medical establishment had often advised women with epilepsy not to have children because of the potential risk to the fetus from both their seizures and their anticonvulsive medications. Today, Krishnamurthy proudly shows off her baby photo album filled with reasons why this advice was wrong. It’s not so much that her program has reduced the inherent risks (although there are many more effective and less detrimental treatment options available to epilepsy patients than there were just a decade ago), but that it has armed women—and their other physicians—with the appropriate information to manage their pregnancies wisely and weigh the costs and benefits.

That the benefits are big may be an understatement. “There are moms who have said to us specifically: I would never have had a child if I hadn’t found you guys,” says Krishnamurthy. “How much more rewarding could it be? It’s not just the fact that they exist, but the fact that we were able to help their parents have something that we take as a right in this country.” Still, outside of her practice, Krishnamurthy hears horror stories of women with epilepsy stripped of some of their most basic freedoms, from joining a gym to seeing a pregnancy to fruition. “I’m a firm believer in free choice,” she says, “but never should you make a choice because you have the wrong information. So that’s not going to change unless we can take what we do here and broaden it, to be able to demonstrate to the country and to the world that there’s a benefit.”

Born in India and raised in the United States, Krishnamurthy attributes her desire to expand the reach of her program to the service-to-others ethic of her upbringing. While she knows that research is key to making that transition from the local to the national level, her success with patients has been a double-edged sword. Krishnamurthy’s a powerhouse but, as WHE’s only permanent neurologist, she’s still only one person. “If more time is spent just seeing patients, we’ll never be able to get to that next step,” she worries. “It’s really sad to think that we’ve made so much progress and my career might end with me.” Nevertheless, as she mulls the future, she doesn’t worry about the next step. “I’m a firm believer in free choice. It’s really sad to think that we’ve made so much progress and my career might end with me.” Nevertheless, as she mulls the future, she doesn’t worry about the next step. “I’m a firm believer in free choice. It’s really sad to think that we’ve made so much progress and my career might end with me.” Nevertheless, as she mulls the future, she doesn’t worry about the next step. “I’m a firm believer in free choice. It’s really sad to think that we’ve made so much progress and my career might end with me.” Nevertheless, as she mulls the future, she doesn’t worry about the next step. “I’m a firm believer in free choice. It’s really sad to think that we’ve made so much progress and my career might end with me.” Nevertheless, as she mulls the future, she doesn’t worry about the next step. “I’m a firm believer in free choice. It’s really sad to think that we’ve made so much progress and my career might end with me.”

“I think our patients being able to forget that they have epilepsy in order to pursue things like having children has been really wonderful, that they can do whatever it takes to have this really valuable life experience. It’s great to be able to give someone back that sense of control or just let them be part of normal life.”
Despite working all night at her job, Susan Spacone knew she had to be on hand for 90-year-old Katherine Holland’s “graduation day” from her six months of intensive therapy on BIDMC’s bone marrow transplant (BMT) unit. Spacone volunteers in the Patient-to-Patient, Heart-to-Heart program, which pairs cancer survivors like herself with patients going through similar treatment to provide empathetic support. “Susan’s just so wonderful,” says Patricia Forino, R.N., an oncology nurse. “I know that sounds cliché, but she gives so much of herself back to the patients.”

BIDMC was founded on the merging of two hospitals with different religious backgrounds but the same unwavering belief that caring for the sick and injured, regardless of faith, was an essential part of their calling. Father Bruce Teague continues this tradition as a member of the medical center’s Department of Pastoral Care and Education, an interdenominational team on call 24/7 to respond to the spiritual, emotional, and psychological needs of people living with illness and hospitalization.

Performing more than 26,000 operations each year, the Roberta and Stephen R. Weiner Department of Surgery at BIDMC has one of the largest surgical training programs in the country. The department has a residency program that offers talented young surgeons, most of whom are from the top 10 percent of their graduating class, didactic teaching and practical experience in the operative care of patients. More than one-third of all Harvard Medical School students also come to BIDMC for their core clerkship in surgery, which is designed to provide a thorough introduction of general surgery regardless of future career plans.

With the integral role of nursing in patient care, the Carl J. Shapiro Simulation and Skills Center provides BIDMC’s 2,040-plus nurses with unique opportunities to practice high-stress, emergency procedures in a safe, virtual reality setting. “One of the things we pride ourselves on is our collegial environment,” says Marsha Maurer, R.N., vice president for patient care services and chief nurse, “and that’s what the simulation center is all about—doctors and nurses working together.” This environment improves job satisfaction along with skills; the medical center currently has only a 2 percent vacancy rate for its nursing positions.
At BIDMC, it’s Lynn Miner’s job to see that you’re greeted with open arms—sometimes quite literally. “I’ve brought patients to their appointment and suddenly the whole family’s hugging me, and I’m hugging everybody,” she laughs. Miner is a member of the medical center’s new Service Ambassador Program, which is designed to ensure visitors to BIDMC don’t get lost in the high-paced shuffle of a major urban health care facility. Ambassadors provide directions, personal escorts to appointments, and offer wayfinding assistance. Miner’s eyes constantly scan the Shapiro Lobby crowd for the telltale body language of someone lost, often offering assistance to people before they realize they need it. She smiles as their looks of bewilderment turn to ones of relief. That’s thanks enough.

“Lights, camera, action.”
A soft-spoken gastroenterologist, Ram Chuttani, M.D., takes center stage, talking a crowded room of observers through a live minimally invasive procedure on a patient as it is simultaneously projected on an array of nearby video screens. Director of one of the largest volume gastrointestinal endoscopy programs in the United States, Chuttani was looking for new ways to share the wealth of his and his colleagues’ expertise. An offshoot of small seminars he started upon his arrival at BIDMC in 1995, his monthly international endoscopy courses now attract physicians from all over the country and across the globe, both in person and via live satellite transmission. It gives new meaning to the term “educational television.”
As they meticulously scrutinize their slides, the quiet intensity of BIDMC’s pathologists belies the fact that often the news that comes out from beneath their microscopes is good. Take the patient who came to BIDMC from another institution for breast cancer surgery only to find out upon review by the medical center’s laboratories that she didn’t have cancer but rather a benign condition that can resemble malignant disease. Or the patient who learned before Christmas that her cancer had not spread to her lymph nodes because a group of pathologists worked day and night to expedite her results. Even though identifying breast cancer can be one of the hardest challenges a pathologist faces, these examples are not isolated incidents. “The fact is, we have the best breast cancer pathologists in the world,” says Jeffrey Saffitz, M.D., Ph.D., chief of the department.

But breast cancer analysis is only a tiny piece of what the pathology department does. Open 24/7, these labs conduct more than six million laboratory tests each year and provide 80 percent of the information that all BIDMC physicians use to manage and treat their patients. Even when the pathologists do find something wrong, their ability to understand the fundamental biology of the disease and to predict its behavior and response to a range of therapies becomes crucial for the success of the patient. “We’re the ones who provide all this information,” says Saffitz. “Unless we get this right, then the outcome can’t be optimal.”

IT’S NOT CANCER
Ana Marin is on hand to make sure everyone understands each other perfectly. Flipping effortlessly between Spanish and English, she confirms that patient and radiology technician have all the answers they need to make Guillermo Ramirez’s MRI procedure go off without a hitch. Marin is just one of more than 40 specially trained interpreters at BIDMC, who provide upwards of 70,000 face-to-face interpretation encounters each year in nearly 30 languages, from American Sign Language to Vietnamese. At a multicultural urban medical center, ensuring the voices of all patients—not just English-speaking ones—are heard loud and clear translates into safe, high-quality health care.

“No se preocupe, usted va a estar bien.”

(Translation: “Don’t worry, you’re going to be fine.”)

“Let’s get them to work.”

Michael Atkins, M.D., deputy chief of the division of hematology/oncology, has made it his job to get more experts around the table in kidney cancer research. As the leader of the only National Cancer Institute–funded SPORE (Specialized Program of Research Excellence) in Renal Cancer, he knows that building a cadre of exceptional investigators in the field will be a key to finding innovative approaches for overcoming this disease. After all, despite many advances in treatment, the annual incidence and mortality rate for kidney cancer has increased for more than six decades. Through the establishment of a new Career Development Awards program as part of the Renal Cancer SPORE, Atkins hopes to provide physician-scientists early in their careers with the financial and intellectual incentives to embrace kidney cancer research as their specialty. With any luck, he’ll need a bigger conference room.
“PERHAPS THE MOST BEAUTIFUL MOMENT IS WHEN SOMEONE IN MY LAB COMES TO MY OFFICE AND HE OR SHE SHOWS ME A NEW RESULT THAT IS LANDMARK—A RESULT THAT REALLY CHANGES THE WAY IN WHICH YOU ARE THINKING ABOUT THE PROBLEM. THESE MOMENTS ARE RARE BUT NOT THAT RARE.”

Dr. Pier Paolo Pandolfi

Bathed in the slanting light of the late afternoon sun, Pier Paolo Pandolfi, M.D., Ph.D., pauses contemplatively to take it all in. All around him, crowding his 10th-floor corner office in the New Research Building, investigators from his laboratory are enthusiastically discussing the fruits of their labors in cancer research. They push and prod, ask and advise, all in the name of moving a project forward. “I think it’s one of the most inspiring moments of the whole process,” says Pandolfi, director of the cancer genetics program at Beth Israel Deaconess Medical Center, “because to do experiments is sometimes boring but to analyze the data is extremely exciting. And, at least in my lab, it’s very interactive; it’s an open discussion all the way.”

Be it a remnant of his Italian upbringing or imbedded in his DNA, free-flowing dialogue figures prominently in how Pandolfi approaches his work. In his relatively short career, he has become the leader of one of the most prolific laboratories in cancer genetics, publishing hundreds of papers and receiving hundreds of citations over the last 15 years. Hand in hand with his willingness to share his results to further the broader research effort, Pandolfi also has a predilection for tackling difficult questions head on, most notably the relentless refrain from the public and the media as to when we will finally cure cancer. “Unlike my colleagues, I always answer this question,” he notes, “and what I say is that we are curing cancer on a daily basis. I think to say that we will eradicate all cancer in 10 years, 20 years is perhaps a bit naïve but to say that we, every day, are finding new drugs, new models, new targets and we are gaining ground on the disease is true. It’s true because I saw it.”
Pandolfi didn’t just see it; he made it happen. As a medical school student at the University of Perugia in Italy, he discovered the genes underlying acute promyelocytic leukemia (APL), a rare malignancy of the bone marrow afflicting mostly young adults. With Pandolfi’s subsequent work at Memorial Sloan-Kettering Cancer Center, which enticed him over to the United States before he had even finished his dissertation, this once-fatal disease is now considered cured with appropriate medical management. “So if it happened once, why should it not happen twice?” asserts Pandolfi. “Of course, some tumors are probably more complex, and it will take more time to understand how they work, but we will do it—it is inevitable and inexorable.”

Pandolfi’s conviction to apply what he learned from his experience with APL to a wider range of cancers is what brought him to Beth Israel Deaconess Medical Center last summer—with 30 investigators and 2,500 cages of mice in tow. He believes BIDMC’s free exchange of ideas across disciplines has created a fertile environment for him and his colleagues to build a new model of translating basic cancer research into more targeted and less toxic treatments for patients. In an era where the medical establishment still talks about “waging war” against cancer, Pandolfi is endorsing a more diplomatic approach that leaves the blitzkrieg strategies of chemotherapy and surgery far behind. “Diplomacy is about knowledge,” he says. “If you don’t ‘know,’ all you can do is defend or attack. We are trying to fix the problem, not kill or suppress it, and when you talk about fixing things, you’re already in a different mindset.”

Fixing things diplomatically takes greater understanding of what makes each particular cancer tick and then using that knowledge strategically to persuade it to change its ways. Not surprisingly, the process takes time. Pandolfi’s success with APL took a decade of dedicated effort—from finding the defective gene involved, to creating a mouse model with the same mutation, to discovering the cure in the mouse model, to finally translating that cure to work in human patients. “We need to find a way to maximize output,” Pandolfi asserts, “because, let’s be honest, the goal for all of us is not only to cure cancer but to cure it reasonably soon.” With the benefit of hindsight, he believes that he might have halved the time it took to cure APL by working in a parallel rather than a stepwise fashion, involving the human patient and the mouse model simultaneously to improve efficiency. This novel approach is now the foundation of translational research at BIDMC’s Cancer Center.

Based on Pandolfi’s experience, cancer patients enrolled in clinical trials at BIDMC are evaluated genetically and “paired” with mice having exactly the same causal mutations, either by using preexisting mouse models or engineering new ones. The patients and their rodent counterparts then receive potential treatment drugs in tandem; with advanced animal imaging, researchers can measure a range of cancer-related factors in the mice and then apply what they’ve learned to the patients in real time.

Ideally, this unique methodology will not only speed up the evaluation process for new drugs but also provide crucial insights into the pathways by which individual cancers wreak their havoc. “On the one hand cancers are very different,” says Pandolfi. “It goes without saying that breast cancer may have different requirements vis a vis treatment than leukemia. But we are also discovering that they have many things in common, and we are finding key nodes that we can pursue with drugs in a targeted but more broadly relevant fashion.”

Ensuring that his research has real-world relevance is particularly important for Pandolfi, not only because he was a physician prior going into biomedical science but because both his parents succumbed to cancer at a relatively young age. “For me, it’s a matter of a personal issue, you know?” he muses. “The disease I’m studying came home.” Pandolfi is unwaveringly optimistic, however, that a convergence of time and location will turn his loss into something good.

With advances in genetics and imaging, he believes that we have reached a turning point in which significant breakthroughs in cancer are imminent. He is also convinced that these breakthroughs will happen only in an interdisciplinary environment like BIDMC. “We’re in the right place,” he smiles. “My only regret is that we should have come earlier.” But then again, the timing had to be right.
When I grow up, I want to be a doctor.

Chief of Neonatology DeWayne Pursley, M.D., M.P.H., is teaching middle school students how to care for premature infants. They’re learning how to do minimally invasive surgery too. No, they haven’t earned their medical degrees—not yet. It’s all part of the Red Sox Scholars program, a joint initiative between BIDMC and the Red Sox Foundation. Each year, the team charity offers 25 academically talented but economically disadvantaged 5th graders in the Boston Public Schools up to $10,000 college scholarships and unique educational opportunities. Clinicians and specialists from all sectors of BIDMC serve as volunteer “medical champions” for each of these promising youngsters, providing them with friendship, career information, and VIP tours of medical center facilities.
On any given day you might find Ciarán Kelly, M.D., moving effortlessly from the laboratory, where he studies a bacterium called C. difficile, to the examination room, where he sees patients with celiac disease. While the former is a hospital-acquired infection and the latter a dietary disorder, the two have a lot in common. They both can cause debilitating intestinal inflammation. Their incidence is dramatically on the rise. And they both have Kelly, an accomplished gastroenterologist, determined to change how they are treated.

When Kelly came to BIDMC in 1996, it was to focus on the mounting problem of C. difficile, an increasingly lethal infection that has exploited three factors in the hospital environment to triple its number of cases since 2000: general ill health, exposure to the infection, and antibiotic use, which decreases competitive bacteria that normally keeps the infection at bay. "In general it sits around minding its own business," says Kelly. "But at present there’s an opportunity to thrive and, unfortunately, it’s taken the opportunity." Noting that the traditional route of treating this antibiotic-induced disease with antibiotics seems "doomed to failure," Kelly says his lab has since generated data that may lead to alternative, immune system-based therapies in the future.

Finding alternatives for those with celiac disease—a digestive disorder in which the immune system attacks the small intestine in response to gluten, a protein found in wheat, rye and barley—had been on Kelly’s agenda since he did his research thesis on the subject back in his native Ireland. But lack of celiac patients in the U.S. caused him to set his early work aside. His hiatus wouldn’t last long. As with C. difficile, the year 2000 would herald a dramatic rise in cases but for an entirely different reason. More accurate diagnosis (due to a new test based on the work of BIDMC colleague Detlef Schuppan, M.D.) would increase the incidence of the disease twenty-fold. Today, Kelly leads BIDMC’s multidisciplinary Celiac Center, one of the largest volume centers focused on the disorder in the country. “We’ve gone from strength to strength,” he says. “We see more and more patients every year.”

It’s time for a change
Food can be comforting when you’re sick. Empowering, too, according to Carol Zagzoug, operations manager of food services on BIDMC’s East Campus. “When you’re a patient, you can’t control your pain, your medication, and all that,” says Zagzoug. “But one thing you can often control is what you’re eating—so it’s great to have choices.” As a result, Food Services, which delivers an average of 1,100 meals a day to patient rooms, has dramatically expanded its menu options. With “At Your Request Room Service,” patients—whose appetites often keep their own schedule—can also order what they want when they want it (taking into account any medical restrictions, of course). Watch out Dominos; freshly made meals arrive at the bedside within 45 minutes.

“Have it your way.”

Whether it’s from across the city, like Tom McManmon, or from across the country, stroke victims are coming to BIDMC to speak to neurologist/neuroscientist Gottfried Schlaug, M.D., Ph.D. With the help of melodic intonation therapy, they are often able to do just that. One in five stroke survivors has severe speech difficulties, or aphasia, as a result of damage to the language centers on the left side of the brain. Using a special mix of singing (melodic intonation) and rhythmic tapping, Schlaug and his colleagues are able to engage the communication centers on the brain’s right side to compensate. Although the therapy is intensive, involving months of daily sessions, the results are dramatic. McManmon is back to cracking jokes, and even patients who suffered a stroke as long as nine years before starting the regimen have shown improvement.
“I GUESS I WENT INTO MEDICINE FOR THE REASONS A LOT OF PEOPLE DO; IT COMBINED BOTH THE HUMANITY SIDE—THE POTENTIAL TO CARE FOR AND HELP PEOPLE—WITH THE EXCITEMENT AND INTEREST IN SCIENCE AND UNDERSTANDING HOW HUMAN BIOLOGY WORKS.”

Dr. Anthony Rosenzweig
Ironically, Rosenzweig’s chosen field has found him drawing upon some of his artistic sensibilities. “There’s a creative process in science,” he says, “it’s the excitement of discovering something new, of putting together the pieces of a puzzle in a way that you didn’t see before—and what’s inspiring to me is the opportunity to make a unique contribution based on that creative process.” With its widespread impact on an aging population, heart disease is an area screaming out for imaginative approaches to treatment. It is particularly attractive to those, like Rosenzweig, who long not only to drill down into human biology on a cellular and genetic level but also apply their insights to patient care. “I was always drawn to cardiology,” he says. “There’s a lot of logic and beauty to the physiology of the system, but it’s also an area in which you can really help people.”

These days, Rosenzweig spends much of his time engaging new, like-minded professionals who see things not only in terms of the particular pathway or molecule they study but in the broader context of what it might mean for cardiovascular disease. His recent recruitment of five new faculty members to the cardiovascular research team—along with an impending move to the newly constructed Center for Life Science and a never-ending stream of grant writing to keep pace with this rapid growth—has him spending more time at his desk and less in his laboratory. “Most of us go into science because we love the science, and then you get to the stage where I’m at and you realize you spend a lot of your time actually doing other things,” says Rosenzweig. “It’s both rewarding and fun, but it can also be challenging to find a balance.”

Fortunately, Rosenzweig has found a happy medium in mentoring postdoctoral fellows and students in his lab, which allows him to offset his more mundane administrative responsibilities with the more transcendent aspects of basic science. “For me the most fun is actually talking with the fellows,” he says, “and thinking about the data and its implications; thinking about the experiments and the ideas behind them. That’s the real excitement.” With recent advances in human genetics and stem cell science, there’s a lot to be excited about. Most of Rosenzweig’s lab is dedicated to studying the mechanisms of heart failure, a condition where the heart is unable to pump blood throughout the body as it should. Affecting nearly five million Americans, heart failure is related to how well heart muscle cells, or cardiomyocytes, function. By genetically manipulating certain cardiomyocyte-related pathways both in the Petri dish and in small animal models, Rosenzweig’s team is learning more about their specific role in these cells’ behavior far more efficiently than with pharmacology-based methods.

However, finding an effective treatment for heart failure would certainly be the laboratory’s ultimate goal. “Our hope is to identify pathways and validate them as potential targets for intervention and then those could be subjected to, for example, a small molecule which might accomplish the same thing that we do genetically,” says Rosenzweig, noting that they recently discovered that inhibiting a certain signaling pathway seems to protect mice against heart failure when they are subjected to stress. “Of course, we have to keep in mind that these are mice and so there are many steps between that and actually getting something to the clinic. But that’s always the hope.” Making the process even more hopeful, he notes, are the technological advances in science and the leaps in cardiovascular understanding that have taken place in the last five years.

Rosenzweig quickly cites a personal example. When he began experimenting with the low-carbohydrate Atkins Diet, one of his fellows, Shi Yin Foo, began to tease him about the possible adverse consequences to his heart based on her observations in the clinic. When he turned to her and said, “You’re just trying to make an anecdotal story,” she discovered that “Atkins” mice seemed to protect mice against heart failure when they were subjected to stress. “That sort of project wouldn’t have existed five years ago,” says Rosenzweig. “We didn’t know about these cells; we didn’t know that they might have something to do with atherosclerosis. So new doors keep opening up to thinking about these things.”

But in all seriousness, Rosenzweig worries that this kind of mentoring relationship and its potential impact on the future of medicine may become more scarce in the current fiscal climate. “There’s a potentially devastating effect on this next generation, which is one of our most important contributions,” he says of cuts in federal research funding. “If we lose that generation, we may wake up in 20 years and wonder where all the scientists have gone.” It is this thought that keeps Rosenzweig at his desk, continuing to brainstorm creative ways to pass the joy he has found in science on down the line.
As a bloodied, unconscious car accident victim is wheeled in from the MedFlight helicopter, the scene in the emergency department is one of unexpected calm. The trauma team members assembled in one of two oversized, fully equipped resuscitation rooms for the most critically injured move with measured precision, each knowing exactly his or her role to play. X-rays are taken. Damage is assessed. The patient is whisked to the OR. All within minutes of arrival. Each year, more than 52,000 patients come to BIDMC's 23,000-square foot Level I trauma center for treatment for everything from auto accidents to allergic reactions. But day or night, the care is always the same—calm, compassionate, and incomparable.
BIDMC’s Office of Development does much more than put out beautiful Annual Reports. As part of its mission to raise the resources the medical center needs to sustain its standards of excellence, the Office also hosts more than 40 events each year—ranging from intimate dinner parties to 1,000-attendee family experiences—to thank loyal supporters and engage new friends.

Consistently ranking among the top four independent teaching hospitals in biomedical research funding from the National Institutes of Health, BIDMC has more than 850 active sponsored projects and 500 clinical trials running at any point in time. Many attribute this success to the medical center’s unique environment of open exchange between its clinical and research units. “From day one, my work was about collaboration,” says Ananth Karumanchi, M.D., who was named a Howard Hughes Investigator in 2007 for his landmark studies of the pregnancy disorder, preeclampsia. “People opened their doors to me. That’s the way it is here, and sometimes I think that makes all the difference.”

Last year, a generous donation to purchase two ambulances for its exclusive use put BIDMC in the driver’s seat when it comes to transferring patients between campuses and to and from its Needham affiliate. Says Jayne Sheehan, senior vice president of ambulatory and emergency services, “For the first time, we have our own transport team, which is fully integrated into the medical center’s systems and gives our patients the thoughtful attention and consistency of high-quality care they deserve.”

At all hours

Each day, 320 members of BIDMC’s housekeeping staff work over the course of three shifts to provide an optimal environment for patients to recover and for employees to do their job—from removing potentially harmful waste to sanitizing rooms to reduce the risk of infection. “These folks are tireless in their efforts to keep our buildings clean and safe,” says Mark McKenna, general manager of environmental services at the medical center of his team. “They don’t get recognized enough for all they do for our patients, visitors, and staff.”

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She comes into the world in the wee hours of the morning, one of about 5,000 babies born at Beth Israel Deaconess each year. Donning her complimentary BIDMC/Red Sox logo baby cap and snuggled in her mother’s arms, she feels just about as safe and secure as anyone can be. She doesn’t realize how spot on her newborn instincts are. Adopting management principles from the military and commercial aviation, BIDMC’s Department of Obstetrics and Gynecology has become a national leader in the movement to improve health care quality and safety. In 2007, the department won two prestigious safety awards from the Joint Commission on Health Care and BlueCross BlueShield of Massachusetts. Today, Beth Israel Deaconess has the lowest adverse event score in obstetrics of any comparable tertiary hospital reporting to the National Perinatal Information Center, a nonprofit organization that collects national data. Oh, baby!