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MICHAEL GRECCO

Medicine at Its Best

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NEWS FROM MEDICINE

WINTER 2017

ADAPTING TO A NEW FACE, VANQUISHING HEPATITIS B,
SMARTER GENE SEQUENCING, AND MORE

“Within one or two generations,
we could eradicate hepatitis B worldwide.”

CALVIN PAN, MD (SEE PAGE 6)

BEFORE HIS face transplant last year at NYU Langone, Patrick Hardison made a deal with his surgeon, Eduardo D. Rodriguez, MD, DDS. "I said, 'You do your part, and I'll do

THE KNOCKOUT PUNCH FOR HEPATITIS B?

A landmark study describes a treatment protocol that could eliminate the transmission of the virus from mothers to infants.

HANKS TO routine childhood immunizations introduced in the early 1990s, the transmission of hepatitis B has plummeted by nearly 90 percent in the U.S., especially from mother to infant—the most common route of infection in children. Yet the virus continues to pose a major threat globally. The World Health Organization estimates that 2 billion people worldwide have been infected with hepatitis B, which can cause cirrhosis and liver cancer.

Prevention is considered the most effective treatment, yet fewer than 30 percent of babies worldwide receive the vaccine at birth. For those who do, protection can be compromised when infected mothers have high levels of the virus replicating in their bloodstream. The consequences can be devastating: a child infected at birth has a 90 percent chance of battling the disease for life.

Now, NYU Langone gastroenterologist Calvin Pan, MD, and colleagues have validated a simple intervention that could finally put an end to hepatitis B infections, and it costs less than \$10 per patient in many developing countries, where it stands to make the greatest impact. “Within one or two generations, we could eradicate hepatitis B worldwide,” says Dr. Pan, a clinical professor of medicine at NYU School of Medicine, who has been researching hepatitis B for over a decade.

Dr. Pan and his team were recently struck by the fact that postnatal immunizations against hepatitis B tended to fail in infants born to mothers with high viral loads. The finding sparked Dr. Pan’s interest in a widely used anti-retroviral medication called tenofovir, known to reduce levels of HIV in the blood of pregnant women and prevent transmission to their newborns. The scientific literature suggested that the medication could potentially do the same for hepatitis B, but the supporting studies were limited in scope.

So in March 2012, Dr. Pan and colleagues set out to decisively address the question of whether tenofovir protects against maternal transmission of hepatitis B with a randomized, controlled trial conducted in five locations throughout China, where hepatitis B is endemic. The study, sponsored by Gilead Sciences, manufacturers of tenofovir, enrolled 200 pregnant women 20 to 35

years of age with high levels of hepatitis B virus. As described in a recent *New England Journal of Medicine* article, the results were striking: Tenofovir administered in the third trimester of pregnancy through one month after birth sharply reduced the mothers’ viral load. Furthermore, transmission of the virus occurred in just 5 percent of the infants in the treated cohort, versus 18 percent in the control group. A closer analysis of the data suggests that the degree of protection may be even greater. “We think the transmission rate is probably less than 1 percent,” Dr. Pan says.

The intervention promises to be particularly beneficial in sub-Saharan Africa and East Asia, where hepatitis B infects up to 10 percent of the population, and people often lack medical resources. Generic versions of the drug, now in use for HIV, should make this treatment accessible and affordable. “In many countries, tenofovir is as cheap as \$3 for a month’s worth of pills,” says Dr. Pan, putting the price of prenatal prevention at just \$9 per mother.

Dr. Pan is now working with American and Chinese officials to expand the treatment. “My prediction is that this will be a seminal study that will change the way we treat hepatitis B globally,” says Mark Pochapin, MD, the Sholtz/Leeds Professor of Gastroenterology and director of the Division of Gastroenterology and Hepatology at NYU Langone. “It’s a very big deal.” ●

The woman sits alone at her desk, a laptop before her and a large plastic tackle box at her side. She pops open the box and removes a headset wired to a handheld device by a set of red and black electrical cables. After snapping a pair of moistened sponges to the front of the headpiece, she slips the rig over her head. On the laptop, a technician supervising the setup via a video link conducts a safety check, then provides the woman with a four-digit code that will unlock the device. Once activated, it sends a mild pulse of electricity into her brain.

It may sound like a scene from a high-tech spy thriller, but this setup is actually part of a first-of-its-kind experimental treatment offered by NYU Langone's Multiple Sclerosis Comprehensive Care Center. The goal is to relieve the debilitating fatigue and cognitive impairment commonly caused by multiple sclerosis (MS), a neurodegenerative disease that affects an estimated 400,000 Americans and 2 million people worldwide. "We're always looking for new ways—especially nonpharmaceutical ways—to treat these symptoms and enhance quality of life in patients with MS," says clinical neuropsychologist Leigh Charvet, PhD, the center's research program director, who—along with the center's director, Lauren Krupp, MD, the Nancy Glickenhaus Pier Professor of Pediatric

Neuropsychiatry—joined NYU Langone last year from Stony Brook Medicine.

In MS, the body's immune system mounts an attack on the protective myelin sheath that covers the nerves in the central nervous system. The symptoms—wide ranging and often debilitating—include muscle weakness, muddled thinking, severe exhaustion, and depression. With the cause of MS unknown, therapies are aimed at managing the symptoms, with varied success. "There is no FDA-approved therapy for fatigue or cognitive impairment associated with the disease," notes Dr. Krupp. Antidepressants are notoriously hit or miss.

This is where the electrodes come in. Some studies suggest that a mild form of electrical stimulation called transcranial direct-current stimulation, or tDCS, can boost brain activity and improve cognition and mood. But the supporting science is limited. Most of the trials to date have included very few subjects or used only one or two sessions. Moreover, few studies have tested the technique on people with MS—owing, perhaps, to the nature of the disease. "It's a real drain for patients to travel in for therapy day in and day out," explains Dr. Charvet. "Many of them juggle work and family obligations or are so disabled that they are dependent on a caregiver or don't have access to transportation."

As a solution, Dr. Charvet has sought to adapt the procedure so that

it can be performed in the home with online supervision from a technician. Remote monitoring is not only easier for patients, but it has enabled her team to conduct a large number of treatment sessions—enough to see meaningful results—while maintaining the standards of an in-clinic visit.

Initial tests indicate that remote monitoring works. In a recently completed trial, participants were sent home with computers and asked to play customized brain-training games as members of Dr. Charvet's team tracked their progress from the clinic. The results showed that participants displayed a significant improvement in mental function, and just as important, demonstrated that remote monitoring can be used successfully to provide cognitive rehabilitation outside a clinical setting.

To test this approach with tDCS, Dr. Charvet has since collaborated with a biomedical engineer and medical device manufacturer to custom-design a device and a headset tailored to people with MS. The apparatus delivers a mild current to the dorsolateral prefrontal cortex, a part of the brain, just behind the forehead, involved in mood, alertness, and some aspects of cognition. The stimulation program runs for 20 minutes, hey

patients, demonstrated that the method was safe and feasible. “We had over 96% compliance, and we never had to discontinue a session because of pain or tolerability issues,” says Dr. Charvet, who published her findings last year in the journal *Neuromodulation*. The study also showed positive effects on information-processing speed, mood, and fatigue. “These are the kinds of things that people with MS really struggle with,” explains Dr. Krupp. Some participants even showed improved gait and overall

physical activity. “That was totally unexpected,” she adds. “So I think there’s a tremendous amount of promise with this approach, which is offered only at NYU Langone.”

How much of the benefit stems from electrical stimulation instead of, say, the daily online interaction with a supportive technician or the simple feeling of being helped? To find out, the team recently extended their study to include a placebo condition.

Whatever the mechanism, Dr. Char-

vet believes the at-home protocol could potentially help mitigate symptoms from a broad range of conditions. She’s now collaborating with researchers at NYU Langone’s Marlene and Paolo Fresco

MOST HOSPITALS work hard to contain infections, but bacteria often work harder to outwit them. One in 15 patients admitted to a hospital in the U.S. will catch a bacterial infection during their stay. More than 800,000 patients a year will pick up methicillin-resistant *Staphylococcus aureus*

“Because our method is so sensitive, we are seeing things that people haven’t seen before.”

EVGENY NUDLER, PHD, JULIE WILSON ANDERSON PROFESSOR OF BIOCHEMISTRY
IN THE DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR PHARMACOLOGY



Nancy Clayton, just a few months after receiving an experimental mitral valve, prepares for her morning workout.

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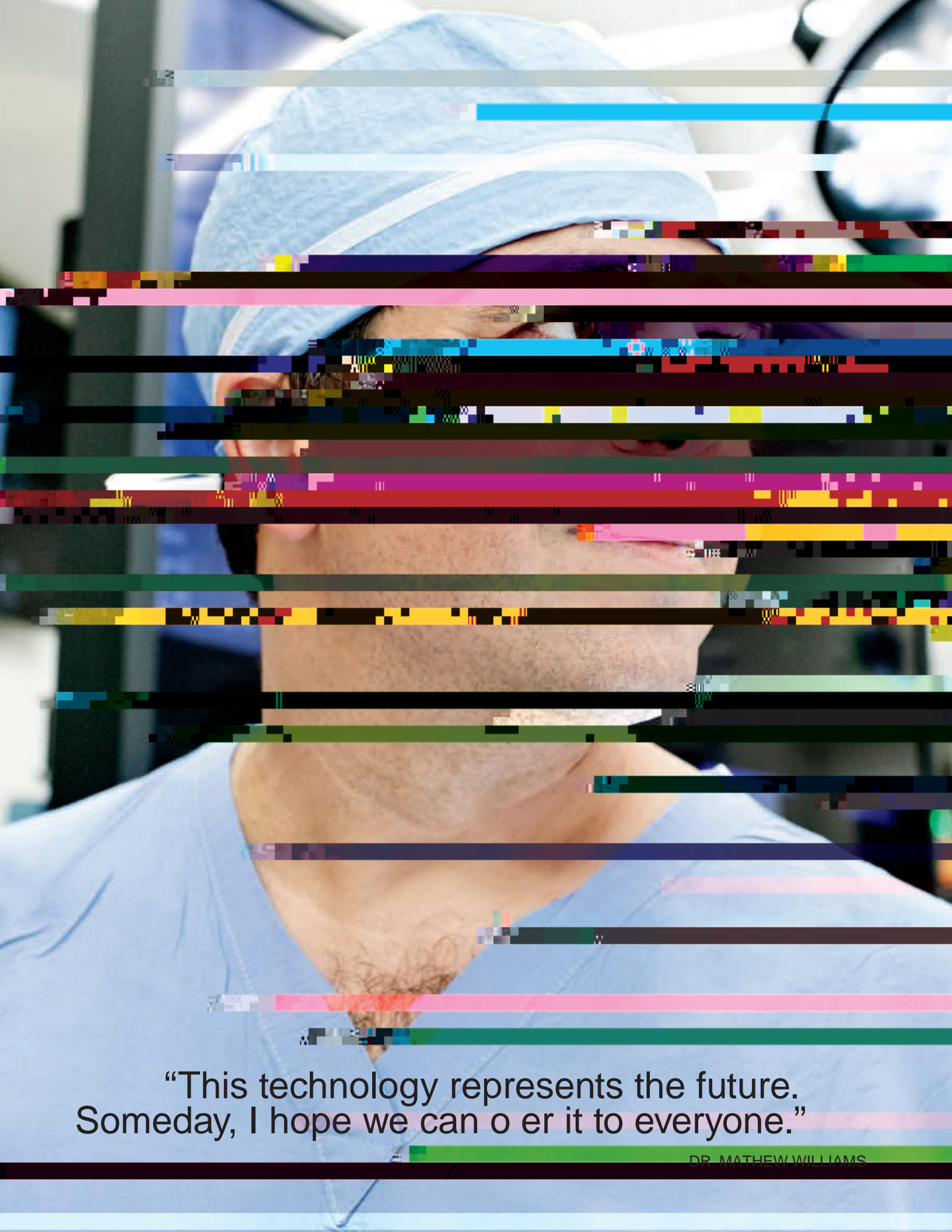
(and Better Than Ever)

Doctors at NYU Langone are pioneering a revolutionary approach to heart valve replacement—one that requires no surgery.

AT 10:00 ON a bright August morning, Nancy Clayton met her rowing coach at a marina in Newport Beach, California. The two exchanged a long hug. “I can’t believe you’re back,” exclaimed the coach, a t young woman named Jill Clapp. “I can’t, either,” Clayton said. ☉ Together, they carried Clayton’s single-scuil racing boat to the dock and slid it into the water. Clayton climbed aboard the low-slung craft, moving carefully to keep the narrow hull from tipping over. Then, she pushed o into the bay, her legs pumping and her seat sliding back and forth with each sweep of her oars. Clapp followed in a motor launch. ☉ Other boaters out that day might have been shocked to learn that the rower skimming past them—with her stylish blond bob and sleek athletic togs—was 73 years old. But there was something even more astonishing about Clayton: just ve weeks earlier, doctors had replaced a diseased valve in her heart.

By Kenneth Miller

Photographs by Michael Grecco & Jonathan Kozowyk



“This technology represents the future.
Someday, I hope we can offer it to everyone.”

DR. MATHEW WILLIAMS

As she paddled, she recalled her two previous valve procedures, open-heart surgeries that required months of grueling recovery. This time, she'd traveled across the country to NYU Langone Medical Center, where she'd volunteered for a groundbreaking experiment: a mitral valve replacement involving no surgery at all. Now, here she was, propelling herself through a light chop, pelicans wheeling overhead, and so far, she'd barely broken a sweat.

A few hundred yards o shore, Clapp pulled alongside. "Ready for some drills?"



PHOTO CREDIT

8
7

9

A

B

C

Mitral
valve

Valve anchor
in place

Prosthetic valve
(pre-deployment)

saddle-shaped, and contracts each time the leaflets close. The atrium above it is a tight space, with little room to maneuver.

That's why progress on transcatheter treatments for mitral valve disease has been comparatively slow. In this country, the sole device available for percutaneous repair of MR is the MitraClip, approved by the FDA in 2013 for high-risk patients with the degenerative form of the disease. The clip works by gripping the edge of the leaflets, pulling them closer together. But while it reliably reduces severe regurgitation to a more manageable level, it seldom eliminates

systems, it was expressly designed for the mitral valve, rather than repurposed from an aortic device. An anchoring ring was installed separately from the valve itself, which made for less bulk. Each part could be withdrawn and repositioned repeatedly for a better fit. "With other devices," Dr. Williams explained, "once you've placed it, you're done. There's no retrievability."

Thanks to recent changes in FDA policy, he added, the artificial mitral valve would be the first TMVR device to begin early feasibility studies in the U.S. rather than Europe or elsewhere in the world, and Clayton could become the first human subject to receive the implant. She





An extraordinary clinical collaboration at NYU Langone is helping pregnant mothers and their babies survive birth defects and prenatal complications once deemed too complex to treat.

BY AMY

ust when her last two
months of pregnancy
seemed like a nal lap,
29-year-old **jaclyn
doell**

AN ULTRASOUND showed the baby's heart pushed too far to the right. Then, an MRI confirmed a rare, devastating birth defect: a congenital diaphragmatic hernia (CDH), in which the stomach, intestines, spleen, and other organs squeeze through a breach in the diaphragm, crushing into the chest cavity where the lungs would normally develop. Of the estimated 1,600 babies diagnosed with this condition each year in the U.S., nearly half do not survive. For the Doells' baby boy, the prognosis was considerably worse. He was given a 33 percent chance of survival, and he would almost certainly require a heart-lung bypass machine at birth. "I work with critically ill children," says Jaclyn. "I've seen a lot. But being on the other side was a complete shock."

Since the hospital wasn't equipped to care for such a critically ill newborn, Jaclyn was transferred to NYU Langone Medical Center, where she was admitted to the new Fetal Diagnosis and Treatment

Fisher left his bedside for two weeks,” says Jaclyn. “It seemed like he was there 24 hours a day, keeping everyone on the same page.”

Staying close to the baby was crucial. “Patients with CDH are very fragile,” Dr. Fisher explains. “Pediatric surgeons are typically very possessive of them from birth to the repair.”

Five days after his birth, Joey was still too compromised to endure a move to

for children's services at NYU Langone. Lloyd and her colleagues are overseeing plans for the new inpatient and perioperative facility at Hassenfeld Children's Hospital of New York, which is slated to open in 2018 within the new Helen L. and Martin S. Kimmel Pavilion.

The newest generation of ultrasound machines produce moving images that are almost as crisp as photographs; doppler ultrasounds measure fetal blood flow so precisely that they can expose conditions as subtle as anemia; fetal echocardiograms help cardiologists detect anomalies as early as eight weeks of gestation. Unsurprisingly, this flood of new tools to see fetal anomalies is inspiring new ways to treat them.

Mara Ross, MD, assistant professor of obstetrics and gynecology, is among a very small cadre of physicians nationwide trained to diagnose and treat fetal conditions, thanks to fellowship training in both maternal-fetal medicine and fetal therapy. With Dr. Ross's help, the Fetal Diagnosis and Treatment Program aims to establish a prenatal laser-surgery program within the next two years to treat, among other things, twin-to-twin transfusion syndrome, a condition in which twins sharing a single placenta develop connected blood vessels that deliver too much blood to one baby and not enough to the other. A tiny laser guided by a periscope-like instrument inserted into the uterus is used to occlude problematic blood vessels.

Clinical capabilities aside, Dr. Ross believes that perhaps the most important part of her job is helping mothers cope with devastating diagnoses. "We're guiding patients through one of the most distressing times in their lives," says Dr. Ross. "It's so important to get to know them and their families, to understand their wishes and their plans for the future. My patients have my cell phone number, and we talk frequently."

with no monitors or tubes. "There is a lot of morbidity associated with CDH that he thankfully escaped," says Dr. Fisher. "He should live a normal life. Maybe he runs a 10-minute mile instead of an 8-minute mile."

Being home, at last, during her husband's paternity leave in May was among the most satisfying days of their marriage, says Jaclyn. The family of three spent every minute together, even 4:00 a.m. feedings, and friends made up for the missed baby shower by quietly leaving gifts at the front door. "Every time I look at Joey, I'm just in awe," says his mother. "He has the best spirit. You would never know he was critically ill. He looks like any healthy six-month-old."

Because he is. ●

A Medical Center Reimagined, Redefined, and Reinvented

DR. ANDREW BROTMAN, CHIEF CLINICAL OFFICER, ON A STRATEGY
FOR GROWTH THAT PUTS PATIENTS FIRST

AS MEDICAL ADVANCES IMPROVE recovery times, and policy changes encourage shorter hospital stays, more and more patients now receive care in an ambulatory setting, away from a hospital. Anticipating this trend nearly a decade ago, NYU Langone Medical Center adopted a bold

meet the needs of our patients, keep pace with healthcare reform, and compete effectively. I read half a dozen newspapers every morning to find out what our competitors are doing, what hospitals in other states are doing—their needs and innovations. We now employ nearly 2,000 doctors, with an additional 700 or so in private practice who are aligned with us. We have ambulatory care sites throughout the five boroughs and Long Island, and some in Westchester.

How does NYU Langone ensure that new participants and practices measure up?

We try to recruit people who have a similar viewpoint, come from a compatible culture, and who are interested in a long-term commitment. We carefully

“NYU Langone is really an ambulatory care network with some hospitals rather than the other way around.”

From atop Tisch Hospital, Andrew Brotman, MD, who has directed NYU Langone's growth initiatives over the last decade.

evaluate their credentials, records, training, etc. Then there are the softer factors, like reputation. We practice due diligence and do the best we can.

What distinguishes our network of ambulatory care sites from that of other institutions?

Ours are primarily physician-driven,

multidisciplinary group practices that combine primary and specialty care. They provide about 95 percent of the patient's care and refer patients to a hospital or hospital-based program if the disease is complex or acute. We haven't expanded our ambulatory network to 11 beds. We don't have that many beds. We've built these programs to deliver high-quality care to our patients in their

FACULTY CONVERSATION

own neighborhoods.

How have the evolving needs and expectations of patients shaped our overall strategy?

More than ever, patients expect and demand more access, better customer service, and higher-quality care. Two decades ago, if it took six months to get an appointment with a doctor and the patient had to wait an hour and a half to see him, many doctors thought that was terrific because it meant they were in demand. Today, that means that we're not doing our job. One of our greatest assets is that we are truly patient centered. A perfect example is our electronic

How does NYU Lutheran fit into our long-range plan?

Because NYU Lutheran is a full asset merger, and not a strategic partnership, we're under the same governance. This allows us to serve Brooklyn's more than 2.5 million residents in closer proximity to where they live and work. About 90 percent of the care provided to our Brooklyn patients is within that borough, so only about 10 percent requires travel to our main campus for subspecialty care. Like most of our alliances, the goal is to bring excellent care closer to home.

A large part of strategic planning is adapting to trends, correct? How do we stay ahead of the curve?

By monitoring the Center for Medicare

and Medicaid Services and other governmental agencies for things like changes in reimbursement policies. We developed an ambitious ambulatory strategy in response to a growing trend: from inpatient care to outpatient care. We anticipated that we were going to need a different payer framework, and that bet has come true. Increasingly, hospitals will provide high-end care for acute illnesses, while most other kinds of care will be offered in the ambulatory sphere.

Healthcare is undergoing so many changes so fast. Which reforms pose the biggest challenges for NYU Lutheran?

Broad initiatives like the Affordable Care Act and bundled care are the most sweeping in scope. But the development of new

pharmaceuticals, medical devices, and other technology continually requires us to measure and assess projected costs versus desired outcomes.

Which healthcare reforms do you wish for the most?

I think we are always going to have to balance cost and care. But I wish that there were better policies established by the insurance companies, the pharmaceutical companies, and the federal government so that it isn't left to practicing clinicians to explain to patients what the restrictions are on the cost side. Other countries have clear policies relating to cost versus availability of services, but in this country we have no integrated guidelines, so it's left to those on the front line to try to adjudicate all this.

Inpatient stays are shorter, yet the acuity of illness is higher. What does that new equation mean for us?

It means that when a patient is discharged from our hospital, they're not out of our care. They are in our care in another segment, and we're responsible for them. If we have shorter lengths of stay that result in higher rates of readmission, then we'll be penalized. The daily judgment calls are very difficult. Our philosophy is that hospitals are necessary when they're necessary.

As health insurers cover less, what does the future hold for patients?

Patients will need to be better informed than ever. With an ever-increasing amount of responsibility for their own coinsurance, copays, etc., patients need to be savvy consumers and careful decision makers. They must look for medical

services and providers that give them real value for their contribution. Hopefully, they won't just look for the lowest cost, but rather the most durable, long-term solution. The patient should be asking himself, "Given the fact that I'm responsible for a fair amount of this cost, is this the place I should go to? Is this the doctor I should see?"

We hear so much bad news about healthcare. Tell us some good news.

The survival rates for various forms of cancer have increased dramatically. Hepatitis C, which used to be fatal, is now essentially curable. Operations that once required 10-day hospital stays now enable the patient to go home after 10 hours—and with better results. These are remarkable advances.

Do you miss practicing psychiatry?

One of my mentors used to say that management is a subspecialty of psychiatry. There's a lot of conflict resolution. You

try to synthesize different points of view. Management is about removing boulders from people's paths so that they can do their work. I use the skill sets of psychiatry every day.

You seem to enjoy making people laugh.

I do. It's critically important. In my psychiatry training, I had supervisors who spent a lot of time focusing on how we needed to keep ourselves even-keeled in the midst of suffering. Part of that is humor, and patients actually appreciate it. It has to be appropriate, of course, but caregivers must maintain a sense of optimism because what they do is very serious business. There needs to be a counter-balance.

What's the future of NYU Langone?

This year, U.S. News & World Report ranked us as one of the country's top 10 hospitals and one of its top 15 medical schools. In both categories, we want to be in the top 5—and ultimately first. ●

“Once we shifted from an individual model of care to a programmatic one, we were able to take on cases that are much more complex. What hasn't changed, of course, is the basic

FACULTY BULLETIN

Bret J. Rudy, MD, at the Helm of NYU Lutheran, Aims to Reshape Healthcare in Brooklyn

In September, Bret J. Rudy, MD, was named executive hospital director and senior vice president of NYU Lutheran, a 450-bed acute care teaching hospital in southwest Brooklyn. The announcement comes just three months after Dr. Rudy was appointed the institution's chief medical officer.

A longtime faculty member and board-certified adolescent medicine physician at NYU Langone, Dr. Rudy had previously served as vice chair of the Department of Pediatrics. Prior to his leadership posts at NYU Lutheran, he helped lay the groundwork for establishing pediatric subspecialty services there, including pediatric gastroenterology, pulmonology, cardiology, and a pediatric hospitalist program. In his new role as hospital director, Dr. Rudy is responsible for improving operational efficiencies and enhancing the scope and quality of care and services at NYU Lutheran.

Drawing upon the deep resources and expertise of NYU Langone, NYU Lutheran aims to

reshape healthcare in Brooklyn. "Our vision is to become the hospital of choice in Brooklyn," says Dr. Rudy. As other hospitals in the area close or expect to close, the need for high-quality medical services in the city's most populous borough, particularly urgent care, is growing steadily. NYU Lutheran, home to a Level 1 Trauma Center and a nationally recognized Comprehensive Stroke Center, has enlarged its stay in emergency medicine. Plans call for the opening of a cancer treatment facility, an expansion of the network of family health centers, the addition of an ambulatory surgery center, and an increase in the number of inpatient beds.

NYU Lutheran, founded in 1883, serves as the hub of the NYU Lutheran system, which encompasses the Lutheran Family Health Centers (65 sites, which include the largest school-based clinic system in the state), Lutheran Augustana (a comprehensive extended care and rehabilitation center), the Lutheran Community Care Organization (a licensed home-care agency), and three subsidized senior housing developments.

Nationally recognized for providing culturally competent

percent, was approved by the Food and Drug Administration in 2006 and is recommended by the Centers for Disease Control and Prevention for people age 60 and older with a healthy immune system. In 2011, it was approved for immunocompetent people age 50 and older. As of

2014, only 28 percent of eligible people age 60 and older in the U.S. have received the vaccine, which is now available without a prescription at most pharmacies. Dr. Cohen encourages doctors to strongly recommend the vaccine to immunocompetent people age 50 and older. ●

tumor immunity, metabolism, and cell-to-cell signaling. Her lab is currently exploring a novel nutrient-delivery system in tumor cells. Previously unobserved in mammalian cells, this system involves the scavenging of extracellular protein by macropinocytosis. It has broad implications for understanding the metabolic vulnerabilities of Ras-driven tumors, which Dr. Bar-Sagi and team hope to exploit in an effort to develop more effective therapies against pancreatic cancer—among the most difficult malignancies to treat. The life expectancy for most people diagnosed with pancreatic cancer is less than a year.

Prior to joining NYU Langone in 2006 as chair of the Department of Biochemistry, Dr. Bar-Sagi headed the Department of Molecular Genetics and Microbiology at the State University of New York at Stony Brook. ●

Dafna Bar-Sagi, PhD, Receives National Cancer Institute's Prestigious Outstanding Investigator Award

As vice dean for science and chief scientific officer of NYU Langone Medical Center, Dafna Bar-Sagi, PhD, is the principal strategist for the institution's research enterprise, which last year received \$328 million in grant revenue.

But her passion for scientific investigation extends beyond the boardroom. "No matter what happens during the day in my administrative life," Dr. Bar-Sagi says, "the last thing I think about before I go to sleep is an intriguing set of data I saw during the day. And the first thing that I think about when I get up in the morning is what's going to happen in the lab today."

In October, the National Cancer Institute recognized Dr. Bar-Sagi—

a senior member of NYU Langone's Perlmutter Cancer Center—for her devotion to science and contributions to cancer research, honoring her with its Outstanding Investigator Award. The prestigious award supports scientists with esteemed records of productivity, encouraging them to continue or embark on research projects with high potential. By providing extended financial support, the award empowers investigators to take greater risks and follow more adventurous paths.

Dr. Bar-Sagi will receive \$1 million per year for seven years to fund her research on understanding the mechanisms that drive pancreatic cancer. The Bar-Sagi laboratory, widely known for elucidating cellular pathways involved in controlling cell growth, has helped shape a new understanding of how Ras oncogenes, a well-studied family of cancer genes, regulate cell proliferation and survival,

Epidemiologist Leonardo Trasande, MD, Receives Nearly \$9 Million to Study the Health Impact of Air Pollution in Early Childhood

"Every baby should have the best opportunity to remain healthy and thrive throughout childhood." So declared Francis S. Collins, MD, PhD, director of the National Institutes of Health, when he announced in September that his agency would award \$157 million in research grants to launch a seven-year initiative called Environmental Influences on Child Health Outcomes (ECHO). The ECHO program investigates how exposure to a

THIS FALL , Dr. Grossman

optimal, and the culture was somewhat depressed. One day I was sitting in my office thinking, "Oh, I'm chair of Radiology, this is a big deal," when a pipe burst in the wall. All of the plaster came down. The office was a mess, and I was trying to recruit people. They would walk in and say, "Hey, what's all this about?" I called the appropriate people, and nothing happened. It took six weeks for the hospital and the school to settle on who owned the wall and who owned the pipes. It's a prime example of why I wanted to combine the school and the hospitals and serve as both dean and CEO.

