To Serve. To Teach. To Discover
SPRING 2023

NYU LANGONE HEALTH NEWS

Why We're #1 in Brain Surgery

WITH RENOWNED EXPERTS LIKE NEUROSURGEON **DR. ANTHONY FREMPONG-BOADU**, NYU LANGONE'S TOP-RANKED DEPARTMENT OF NEUROSURGERY HAS BECOME THE NATION'S LEADING DESTINATION FOR COMPLEX CASES. PAGE 2

Part I

Cover Story

Many Brain Surgeons Send Their Toughest Cases to NYU Langone. Here's Why.

A decade ago, neurosurgeon John G. Golfinos, MD, said that his goal as chair of the Department of Neurosurgery was for NYU Langone Health to become the institution to which other neurosurgery centers refer their most difficult cases. As he put it, "We get the job done." Last July, NYU Langone smashed that goal, becoming the go-to destination for patients in need of neurosurgical care when its Department of Neurosurgery ranked #1 in the country on *U.S. News & World Report*'s influential 2022–23 "Best Hospitals Honor Roll."

The accolade was just the latest indicator that NYU Langone's neurosurgeons are setting the standard for clinical outcomes. Vizient, Inc., the nation's largest

"We get the job done."

John G. Golfinos, MD, chair of the Department of Neurosurgery

NYU Langone's intraoperative MRI, one of only two in New York City, allows imaging to be performed in the operating room.

CHRIS PAYNE

Dr. Seth M. Lieberman (right), who specializes in head and neck surgery, with neurosurgeon Dr. Donato R. Pacione (left)

"We have a strong culture of quality and safety. We're always finding things that we can make even better."

Donato Pacione, MD, director of quality assurance for NYU Langone's Department of Neurosurgery

member-driven healthcare performance improvement company, has rated NYU Langone's Department of Neurosurgery #1 in the country for its ability to lead patients who experience clinical complications to a full recovery. It has also ranked its Brain and Spine Tumor Center #1.

Completing more than 6,000 neurosurgical cases each year, NYU Langone has a mortality rate of less than 0.1% for cranial procedures, the nation's lowest. Donato Pacione, MD, the department's director of quality assurance, attributes the outstanding outcomes to several factors. Many of the department's 30 neurosurgeons are subspecialists dedicated to their area of expertise. "There's no surgical case we can't handle," says Dr. Pacione. "Our surgeons are not only excellent technically, but many are also federally funded to research brain tumors, which partly accounts for the referrals we get from other centers." Anthony Frempong-Boadu, MD, director of the Division of Spinal Neurosurgery, notes that "some of our colleagues are iconic. The intellectual exchange elevates everyone's game."

John G. Golfinos, MD, chair of the Department of Neurosurgery

Moreover, every member of the care team is dedicated solely to neurosurgery, ensuring well-coordinated choreography from the OR to the ICU. The first 48 hours or so after surgery is the period of greatest concern for complications, such as excessive bleeding or fluid build-up. At NYU Langone, the risk of a life-threatening complication is less than 1%, explains Dr. Pacione. And 98% of patients who experience an adverse event recover thanks to swift intervention.

NYU Langone's advanced imaging technologies, which help clarify the margins of a tumor right in the operating room, also enhance outcomes. "We have cutting-edge technology in every form," says Dr. Golfinos. "All these tools work together to make tumor removal faster, smoother, and more accurate."

But the greatest contributor to the department's excellence may be the most intangible: attitude. "We have a strong culture of quality and safety," says Dr. Pacione, "We're always finding things that we can make even better."

TO FIND A DOCTOR WHO TREATS BRAIN CANCER, VISIT NYULANGONE.ORG/PCC OR CALL 833-698-5722.

Tech We Love

MONITORING BLOOD SUGAR DURING PREGNANCY JUST GOT A LOT EASIER.

As many as 1 in 10 pregnant people in the US will develop gestational diabetes. The condition can lead to a larger-than-average baby and complications during childbirth for both mother and baby. For patients, knowing whether adjustments are needed to their treatment regimen can be a waiting game between doctor's visits. But for 1,000 patients at NYU Langone Hospital—Long Island, guidance comes unusually fast. That's because they're enrolled in a pilot program run by the Maternal–Fetal Medicine Division at NYU Langone Hospital—Long Island in collaboration with NYU Langone's Medical Center Information Technology team. The program tracks blood sugar in near real-time using Bluetooth-enabled glucose monitors, and automatically uploads results to the NYU Langone Health MyChart app and the Remote Patient Monitoring platform.

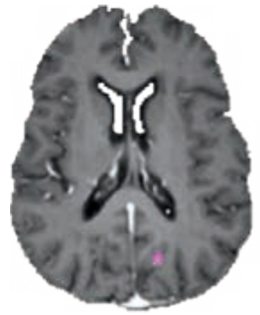
Typically, a patient with gestational diabetes tests their glucose four times a day, manually logs their measurements, and then brings the results to their next doctor's appointment. But those enrolled in the pilot—called the Diabetes in Pregnancy Remote Patient Monitoring Program—can automatically transmit their data to their electronic health record for review by the maternal–fetal medicine team. "Before, we wouldn't know about abnormal blood sugar values until the patient brought in their glucose logs," says maternal-fetal medicine specialist Hye J. Heo, MD. "Now, we are able to make medication adjustments within hours, providing faster glycemic control that reduces the risk of diabetes-related complications."

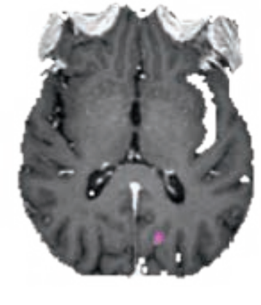
Preliminary results, set to be published this year, are encouraging. Remote monitoring resulted in fewer blood sugar spikes; reduced risk of hypertension disorders; and lower risk of neonatal hyperglycemia. Says Dr. Heo, "This method is so much easier for patients and leads to improvement in pregnancy outcomes." She looks forward to expanding this program to obstetric practices in Manhattan and Brooklyn.

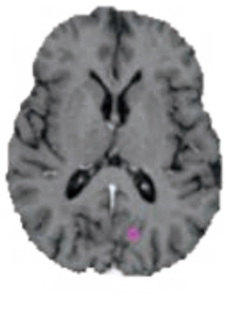
Cover Story

Part II

Artificial Intelligence Meets the World's Largest Database of Brain Scans







A series of MRI scans shows a tumor (pink) shrinking and then evolving after irradiation.

Metastatic brain cancer is a notorious shapeshifter. "Almost all tumors respond to treatment, but there's a lot of variability in how they change," notes neurosurgeon Douglas Kondziolka, MD. The process by which cancer spreads is a dynamic one, he explains, and new mutations can arise randomly or in response to treatments. This natural bias for evasion makes it hard to track brain cancer's stealthy evolution—clinically, molecularly, and genetically.

Keeping up with it calls for extraordinary vision and speed. In short, it calls for artificial intelligence. NYU Langone Health's Department of Neurosurgery, ranked #1 in the nation, has long been at the forefront of applying AI to solve tough clinical problems. It only made sense for Dr. Kondziolka, vice chair of clinical research in the Department of Neurosurgery, to team up with fellow neurosurgeon Eric Oermann, MD, an AI expert and Google alum, to tap the full power of AI to advance the scientific understanding of metastatic brain cancer.

Together, the neurosurgeons have debuted the world's largest public database of brain tumor images. Along with a suite of AI tools to help scientists mine the images for meaning, the database will help clinicians map disease progression in real time and assess individual responses to treatment. "For the first time," says Dr. Oermann, "scientists anywhere will be able to apply computational tools developed from this database for clinical purposes."

The project, called NYUMets* for "NYU metastases," launched publicly last fall—you can visit it at nyumets.org—but its origins began much earlier. When Dr. Kondziolka arrived at NYU Langone a decade ago to head the Gamma Knife program, which uses gamma radiation to treat brain tumors, blood vessel malformations, and functional disorders, he started cataloging the brain scans of his patients and the de-identified clinical data that accompanies them. The repository now contains more than 20,000 image sequences, drawn from 8,003 MRI studies of 1,429 patients. Add the power of AI and the database transforms from an image catalog to a think tank for neurosurgeons and brain cancer researchers. For example, Dr. Kondziolka and Dr. Oermann have collaborated with research scientist Katherine Link to develop a state-of-the-art algorithm for detecting small tumors.

"What makes this database so powerful is its size," explains Dr. Kondziolka. Traditionally, therapeutic regimens are guided, in large part, by the published results of evidence-based clinical trials. Dr. Kondziolka notes, however, that the findings of such trials may be limited, due to the size or composition of the patient sample, or other factors. "We do our best to assess how tumors grow or shrink over time," he says. "But we're left to wonder, Did the tumor shrink by 17% or 75%? Did drug X make it shrink more than drug Y? Was radiation more effective than drug X? None of these things are very clear."

NYUMets was built to deliver answers, and along the way close the gap between AI and neurosurgery. "We need to fundamentally rethink how we approach cancer analytics," says Dr. Oermann. "Our goal is to encourage computational scientists to start thinking about cancer the way clinicians do—not as an independent entity, but as a disease someone lives with over time."

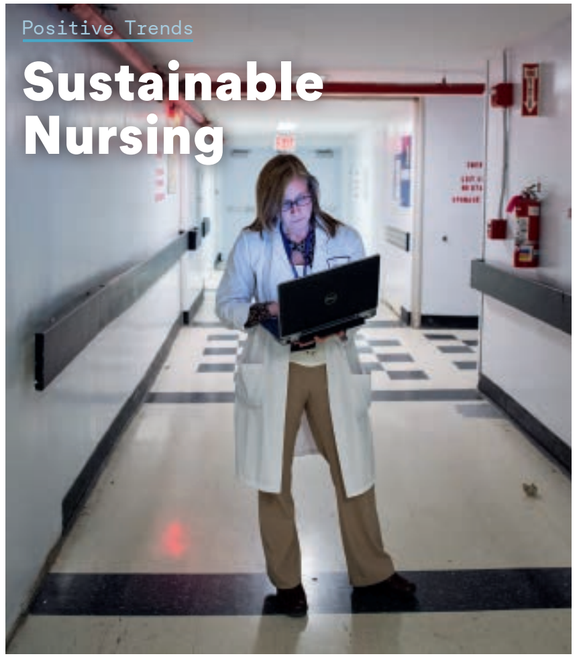
ABOUT OUR TEAM

NYU Langone's Department of Neurosurgery is ranked #1 in the country on *U.S. News & World Report*'s influential 2022–23 "Best Hospitals Honor Roll." Vizient, Inc., the nation's largest member-driven healthcare performance improvement company, has rated the department #1 in the U.S. for its ability to lead patients who experience clinical complications to a full recovery.

TO FIND A DOCTOR WHO TREATS BRAIN CANCER, VISIT NYULANGONE.ORG/PCC OR CALL 833-698-5722.

*** NYUMets is a collaboration between NYU Langone's Departments of Neurosurgery, Radiology, and Radiation Oncology; Perlmutter Cancer Center; the NYU Center for Data Science; and the Center for Advanced Imaging Innovation and Research.**

GETTYIMAGES/SCIENCE PHOTO LIBRARY



Positive Trends

Sustainable Nursing

NYU Langone Health has long enjoyed an outstanding reputation not only for its quality nursing care, but also for being a desirable place for nurses to work. That's as true today as ever. The institution's turnover and vacancy rates for nurses are significantly lower than the national average. Since the first quarter of 2021, our nursing staff has increased by 12% institution-wide, with 800 new positions created beyond those hires that fill vacancies. With the highest orientation rate in nearly three years—more than 550 RNs are currently in orientation—the numbers will get even better.

"Our quantity is matched by our quality," says Debra Albert, DNP, RN, chief nursing officer and senior vice president for patient care services. "We have a nursing workforce that is more experienced, more educated, and more loyal to our institution than the national average." These qualities help explain why NYU Langone is the only health system in New York State that has earned the prestigious Magnet recognition for all of its hospitals. Magnet designation is achieved by only 9.4% of hospitals in the US.

NYU Langone's strong workplace culture is its greatest recruitment and retention tool for nursing, Dr. Albert notes, but she emphasizes that a host of progressive initiatives have also bolstered their success. The latest of these is a nurse manager succession-planning program, recognized by experts as one of the keys to mitigating nursing shortages. Nurse managers ensure that clinical units run smoothly, and they play a pivotal role in helping to prevent burnout. Succession planning, one component of a larger strategic plan to develop, retain, and support nurses, identifies qualified candidates for these leadership positions.

NYU Langone is among fewer than 7% of healthcare institutions in the US that have developed a formal plan of this type. "A big area of opportunity is within the nurse manager role," says Eileen Magri, PHD, RN, senior director of nursing at NYU Langone Hospital—Long Island, who leads the Succession Planning Committee.

The program prioritizes mentorship to help nurse leaders from minority groups advance into executive roles. Dewi DeVeaux, DNP, RN, senior director of patient engagement and experience at NYU Langone Hospital—Brooklyn, created a mentorship program for her doctoral project, conducting a pilot study on two of our campuses. Eventually, this initiative was folded into a larger strategy to promote diversity, equity, and inclusion, as well as to increase diversity within the nursing leadership team. "Succession planning maintains a primed pipeline of knowledgeable nursing staff in the workforce," says Dr. Magri. "This ultimately affects quality, safety, and patient outcomes."

FOR INFORMATION ABOUT NURSING AT NYU LANGONE, VISIT NYULANGONE.ORG/NURSING.

Emotional First Aid

Mental Wellness: It's in the Bag

In January 2022, a team of staff volunteers organized at each of NYU Langone Health's campuses began responding to calls across the enterprise. These requests, though, weren't coming from patients, and the responders weren't wielding medical supplies. Instead, they toted lavender bags brimming with snacks and water—essentials during stressful events—and even relaxation tools, such as aromatherapy packets and prayer cards. The teams are trained to help frontline workers through the emotional crises they face on the job every day, providing them with a caring, comforting presence.

The Lavender Response Team comprises specially trained volunteers from different disciplines—the group varies in number depending on available personnel—who serve as a kind of psychological first aid unit for hospital employees. "The pandemic reinforced what we already knew: healthcare workers have to face stressful, even traumatic, situations," says Debra Albert, DNP, RN, chief nursing officer and senior vice president for patient care services at NYU Langone. "We have to put the days of 'putting on a brave face' in the past."

Team Lavender was developed collaboratively among the nursing, social work, integrative health, and chaplaincy departments at NYU Langone. Anyone in the hospital can summon a Lavender response, but most of last year's 128 calls were spurred by a stressful care situation or patient death. When a call comes in, a volunteer responds to provide immediate support. "Where the magic happens is having someone standing in front of you asking, 'What can I do for you right now?' " says Kathleen DeMarco, MSN, RN, system senior director of nursing wellness and resilience. Team Lavender will follow up after a visit as needed.

Each response not only assists a healthcare worker in distress, but also generates data that help the program improve its performance. For example, when several nurses reported in late March that they felt overwhelmed without the assistance of support staff who could spend time with patients to meet their nonmedical needs, hospital leadership restored volunteer services that had previously been suspended due to COVID precautions.

"The ultimate goal," says DeMarco, "is for employees to know that the institution cares for them and that we are going to be physically present for them."

NYU Langone's specially trained Lavender Response Team delivers wellness support to employees grappling with emotional distress. Its "first aid" kit includes stress-busting essentials, from snacks and water to aromatherapy and prayer cards.

DEVON JARVIS

Big Ideas

Dialysis from the Comfort of Your Own Home? NYU Langone Hospital—Long Island Makes It Possible.

The dialysis program at NYU Langone Hospital—Long Island has long been nationally recognized for its excellence. In January 2022, the hospital bolstered that reputation when it became the first in the US to enable patients with end-stage kidney disease to transition directly from inpatient dialysis treatment to independent treatment at home.

The new model of care is a major win for patients. Some 558,000 people in the US with compromised kidney function require a dialysis machine to help filter toxins from the blood and remove excess fluid and salt. Traditionally, this only happens in hospitals or outpatient dialysis centers and requires three-to-four office visits a week. But now qualified patients at NYU Langone Hospital—Long Island can take advantage of a compact, automated dialysis machine, approved for home use by the FDA in April 2020.

The self-contained dialysis clinic on wheels is about the size of a mini-fridge, a far cry from the conventional 200-pound version used in inpatient and outpatient settings. During the COVID surge of 2020, when demand for inpatient dialysis soared, Naveed Masani, MD, medical director of dialysis services, and Joseph Greco, MD, senior vice president and chief of hospital operations, approved the acquisition of five mini-machines to facilitate bedside dialysis treatment. "It was a game changer," says Faith Lynch, DNP, RN, director of acute and home dialysis services. "The remote monitoring function drastically decreased nurse exposure to COVID," she explains. Hospital leadership soon recognized that by making the machine available for home use, a new model of delivering dialysis care would expand the number of patients who could receive care. The hospital now has 11 machines—five currently used for home treatment, four assigned to inpatient units, and two available for additional patients who qualify. The device is also deployed on inpatient units of NYU Langone's hospitals in Manhattan and Brooklyn.

Studies show that patients who receive home-based dialysis have longer survival rates. "You're cleansing and removing fluid four or five times a week," says Dr. Masani. "But the sessions are shorter, so your body has more time to catch up." That can mean faster recovery from fatigue and less stress on the organs.

The ideal candidate has a care partner, a suitable environment, and adequate dexterity and vision to operate the equipment. Another big must is a medical team with the strategy and resources to manage the transition. "Acute-to-home dialysis is very resource intensive, requiring many hours of training and preparation by clinicians and others," explains Dr. Masani. "No other hospital is currently offering this service, but NYU Langone has made this important investment because we're all about enhancing the patient experience."

TO FIND A DOCTOR WHO TREATS KIDNEY DISEASE, VISIT NYULANGONE.ORG/KIDNEYDISEASE OR CALL 646-929-7950.

Last January, Conor Malangone, a 33-year-old financial consultant from Lake Grove, NY, became the first patient in the nation to benefit from acute-to-home dialysis. After three days of training on the machine in the hospital and six more at home, Malangone, who has a progressive kidney condition, was able to self-administer treatments. He'll continue the regimen until he can get a kidney transplant.

COURTESY OF ASHLEIGH MALANGONE

"The machine allows my life to be as normal as it can be. I can play golf in the morning and do dialysis at home afterward."

Conor Malangone, a 33-year-old financial consultant with a progressive kidney condition

The Expert Is In

The Kids Are Not Alright. Here's What We Need to Do About It.

JENNIFER HAVENS, MD, CHAIR OF NYU LANGONE'S DEPARTMENT OF CHILD AND ADOLESCENT PSYCHIATRY

The Centers for Disease Control and Prevention reports that between 2009 and 2019, young people experienced a 10% increase in depression and a 5% rise in suicidal behavior. Those numbers prompted leading pediatric organizations to declare a national mental health crisis. Last year, Jennifer Havens, MD, was appointed chair of NYU Langone's Department of Child and Adolescent Psychiatry. A leader in the effort to improve child mental health services, she offers her insights and perspectives on this troubling trend.

Which factors account for the alarming rise in mental health issues among young people?
This trend actually began in the 1990s. The data shows that anxiety, depression, suicidal behavior, and eating disorders were all increasing well before the pandemic. But prolonged isolation exacerbated these problems, increasing the acuity of the need for professional care and creating a demand that we cannot meet. For most kids, the world is much more stressful than it used to be. They're exposed to everything, and less protected from harmful influences. Also, puberty begins earlier now, and with it comes stress. Kids are struggling with mental health challenges at younger and younger ages.

What role does social media play in this crisis?
It's a two-sided coin. Social media makes cyberbullying very easy, and that's a precipitant for a lot of mental health problems in young people. In 2004, I opened the world's first psychiatric emergency department for children at another hospital in New York. A lot of kids came in feeling suicidal after being bullied. On the flip side, social media can have a lot of positive elements. For example, gay youth from cultures that are not supportive now have access to a support system. I think the jury's out on whether social media is actually damaging to children.

Are kids faring better now that the isolation of the pandemic has receded?
We'll know in the months ahead. COVID forced kids into an entirely virtual world. It confirmed what we already know, which is that too much screen time and not enough interaction are unhealthy for kids. We've seen how social isolation can exacerbate anxiety and depression in young people. It's fabulous that children are back in school.

Talk about your biggest advocacy efforts.
I'm involved with Healthy Minds, Healthy Kids, a group of statewide advocates, providers, and social service agencies, as well as planning efforts for New York City's child and family mental healthcare system. We've been working to figure out which levers we need to pull to address underlying issues. Many of these issues are financial. Underreimbursement for mental health services affects both access and quality, as well as the development of a sustainable workforce.

Which treatment strategies are most effective?
About 80% of people respond well to mental health treatment. We've learned so much about what causes mental illness, how to treat it, and how to work with families. We have evidence-based psychotherapies for anxiety, depression, and trauma that really work. But the reimbursement system and our structural mental health system haven't caught up. Several states, including New York, have invested in training and consultation for pediatricians to treat children. There are only about 8,000 child psychiatrists in America, so these programs are critical. With the dramatic increase in youth suicidality, we know that children are dying because their families can't find the right mental health services.

Has telemedicine expanded access for young people with behavioral health issues?
Telepsychiatry is a big advance, but it has limitations. It doesn't increase the number of providers. It works for many people, but it doesn't work for very young kids, and it's just not appropriate for others. And it's also not ideal in an emergency situation.

Do you expect the debut of 988, the National Suicide Prevention Lifeline, to reduce the number of teen suicides?
I hope so, but I worry about what we do once the child has calmed down, and they need somewhere to go for care. Having immediate access to a professional in a moment of crisis is crucial. And remember, the most worrisome group is young people who don't tell *anybody* that they want to commit suicide. They're the ones really intent on doing it.

What makes you hopeful?
Today's kids are amazing. They're very resilient, and they're going to bounce back from these setbacks. We continue to make progress in both the prevention and treatment of mental health issues. We are working as hard as we can to make accessible, affordable mental healthcare available to all children and their families.

"About 80% of people respond well to mental health treatment. We've learned so much about what causes mental illness, how to treat it, and how to work with families."

Jennifer Havens, MD, chair of NYU Langone's Department of Child and Adolescent Psychiatry

KARSTEN MORAN

TO FIND A SPECIALIST IN CHILD AND ADOLESCENT MENTAL HEALTH, VISIT NYULANGONE.ORG/CSC.

ANGELA WEISS/GETTYIMAGES

On April 12, 2022, emergency vehicles lined the street outside the 36th Street subway station, less than five minutes away from NYU Langone Hospital—Brooklyn.

"We treat trauma cases every day. Gunshot wounds, stab wounds, car accidents—it's what we train for. It's why we come to work, to help our community."

Ian Wittman, MD, chief of emergency medicine, NYU Langone Hospital—Brooklyn

Emergency Response

The Moments that Define Us: One Year After the Subway Attack in Sunset Park

April 12, 2022. It's 8:50 am on a brisk but sunny Tuesday morning. Ian Wittman, MD, is walking into a weekly leadership meeting at NYU Langone Hospital—Brooklyn's Emergency Department when his phone buzzes. As the hospital's chief of emergency medicine, Dr. Wittman is accustomed to a noisy phone. But this message is different. It's from NYU Langone Health's Emergency Management and Enterprise Resilience team, alerting him to an "MCI," shorthand for Mass Casualty Incident, unfolding at a nearby subway station. Reports indicate an active shooter and multiple victims. By 8:59 am, the first victim arrives at the Emergency Department, with more en route.

By then, the shooting has already made national headlines. First-responders and government officials swarm the scene at the 36th Street station of the N train in Sunset Park, where the shooter ignited a smoke bomb and began firing shots into a crowded subway car. The NYPD's Bomb Squad arrives. The calamity will register as New York City's worst public-transit crime in decades. But amid the chaos, as police officers and federal agents hunt for the suspect, the emergency-medicine team at NYU Langone Hospital—Brooklyn, located just five minutes away from the scene, sets in motion a procedure so frequently rehearsed that it unfolds with the calm and routineness of an ordinary day.

As part of a leading Trauma Center that treats more than 200 patients with injuries that threaten life or limb annually, the team is quite literally built for worst-case scenarios. It performs quarterly tabletop exercises that simulate acts of terrorism, natural disasters, and other mass tragedies; biweekly trauma simulations; and daily debriefings and safety huddles. "Frankly, we treat trauma cases every day," says Dr. Wittman. "Gunshot wounds, stab wounds, car accidents—it's what we train for. It's why we come to work, to help our community."

Seconds after the text alert, Dr. Wittman runs point on communication, aligning experts in trauma surgery, the operating room staff, hospital leadership, and others across the hospital. Within five minutes, his team has prepped additional trauma bays and assigned staff to triage duty. Leslie Tyrie, MD, chief of acute care surgery and medical director of trauma, readies vascular, orthopedic, and other surgical specialists to treat victims potentially with multiple injuries.

The nursing staff snaps into action, starting workflows designed for mass casualty incidents. Its Lavender Response Team *(see page 9)* stands ready to support patients and staff alike in times of crisis. The media relations team is on site to handle the news vans that arrive shortly after the ambulances. The information-technology team provides special tools to facilitate lightning-fast clinical communication. "Everyone remained very calm and laser-focused," says Staci Mandola, RN, nurse manager of the Emergency Department. "The teamwork was impeccable."

By 10:30 am, the emergency-medicine team has treated 21 victims. Five patients require surgery. The others are treated for smoke inhalation. Fortunately, no additional victims arrive and the team is spared any casualties. In the end, more than 200 staffers were enlisted to ensure the safety and well-being of the victims. By nightfall, New Yorkers remained on high alert as authorities scoured the city for the suspect. The team at NYU Langone Hospital—Brooklyn, meanwhile, had resumed its "normal" workflows. For them, high alert is a requisite of the job. The seamless coordination of the morning's rush—an extraordinary event triaged in ordinary fashion—only deepens their commitment to their day-to-day work.

"People tend to be their best selves during a crisis, and that's especially true in emergency medicine," says Dr. Wittman. "We don't need a traumatic event to show us why what we do every day is important, but it does reaffirm our dedication to training, preparation, and teamwork."

The Explainer

4 THINGS YOU MAY NOT KNOW ABOUT

Kidney Transplants

IN 1954, the human kidney became the first organ to be transplanted successfully, an achievement that later earned surgeon Joseph Murray, MD, the Nobel Prize. Today, kidneys are the most commonly transplanted organ in the US. Doctors at NYU Langone's Transplant Institute performed more than 300 kidney transplants last year alone. And the number of those patients who survived one year with their new kidney exceeded the national average.

Despite the prevalence and success of the procedure, many people are in the dark about how it works. Here are four little-known facts about kidney transplantation.

1

You don't need to be on dialysis to qualify for a kidney transplant.

In fact, patients who receive an early transplant enjoy better long-term health and a higher quality of life. For one, it eliminates the need for dialysis, a procedure that uses a machine to do the work of the kidneys. "For patients with end-stage kidney disease, the outcomes of a kidney transplant are superior to being on long-term dialysis," explains Robert Montgomery, MD, DPhil, director of the NYU Langone Transplant Institute and chair of the Department of Surgery. "A transplant more than doubles the lifespan of the patient." At NYU Langone, 28% of kidney recipients receive a transplant before they need dialysis.

2

One new kidney is all that's needed.

Although we're born with two kidneys, most transplant recipients require only one. "A single, healthy kidney will usually do enough work," says transplant surgeon Bruce Gelb, MD. "That means that one deceased donor can save the lives of two people." When only one kidney is present, its filtering units, or nephrons, compensate by increasing in size to handle the extra load of waste products and excess fluid they must filter from the blood. One caveat here is age. If a deceased donor is very young or very old, a recipient may receive both kidneys to provide enough functional nephrons. Though the majority of kidneys transplanted come from deceased organ donors, getting a transplant from a living donor is ideal. The kidneys almost always last longer, patients experience fewer complications, and there's no need for the patient to spend time on the national waiting list. Living donors usually spend two days in the hospital and can resume normal activities in three to four weeks.

3

Kidneys that stop working stay put.

Surgeons typically don't remove the recipient's native kidneys—unless they're greatly enlarged or causing severe problems, such as high blood pressure or infection. "The nonfunctioning kidneys just get smaller over time," notes Dr. Gelb.

4

A new kidney isn't placed in the same spot as the original one.

Unlike a transplanted heart, lung, or liver, which occupies the same space as the original organ, a new kidney is implanted in the lower abdomen, where it can more easily be connected to the bladder and major blood vessels. "Our native kidneys sit high in the abdomen, partially protected by the ribs, so accessing them requires a more invasive surgery and risks creating scar tissue in the abdomen," explains Dr. Gelb. "Though the kidney is about the size of a fist, there's a lot of flexibility in the abdomen. The transplanted kidney can be placed there without compromising nearby organs and is readily accessible if a biopsy is needed."

FOR INFORMATION ABOUT THE KIDNEY TRANSPLANT PROGRAM, VISIT NYULANGONE.ORG/KIDNEYTRANSPLANT OR CALL 212-263-8134.

JASENKA ARBANAS/GETTYIMAGES

Women's Health

Big Menopause Myths, Busted

Each year, more than one million women reach menopause, defined as a year without a menstrual period. This milestone, once whispered about as simply "the change," is coming out of the shadows and into the public discourse, as more and more women seek treatment.

To meet the growing demand, NYU Langone has launched the Center for Midlife Health and Menopause. Run by two certified menopause practitioners, Samantha Dunham, MD, and Laurie Jeffers, DNP, the goal of the center is to address the very real medical and emotional needs of women during this pivotal time in their lives. "Menopause treatment is a pillar of gynecological care that hasn't received the attention that it should," says Dr. Dunham.

Part of providing care is helping women access treatment. That starts with better education around what menopause is—and what it isn't.

Here, Jeffers and Dr. Dunham address some of the biggest menopause misconceptions they routinely encounter in their practice.

MYTH:

THERE'S NO SUCH THING AS A MENOPAUSE SPECIALIST

Look no further than Jeffers and Dr. Dunham. In truth, there are doctors and nurse practitioners who specialize in menopause treatment, and they have the training to prove it. Seek out menopause practitioners credentialed by the North American Menopause Society (NAMS). These providers, including those at the Center for Midlife Health and Menopause, have the specialty training to manage menopausal health and its range of symptoms.

MYTH:

MENOPAUSE SYMPTOMS DON'T LAST LONG

"This is one of the biggest myths I hear from patients—that their menopause symptoms will only last about a year, and then everything goes back to normal," Dr. Dunham says. "The truth is, the course of symptoms is unpredictable and will likely be much longer than a year."

In fact, studies show that symptoms last an average 7.4 years. Women can experience a long list of physical and mental disruptions—hot flashes, night sweats, difficulty sleeping, diminished sex drive, trouble concentrating, mood changes, anxiety, bladder problems, heart discomfort, physical and mental exhaustion, and vaginal dryness.

MYTH:

HORMONE THERAPY IS THE ONLY TREATMENT FOR MENOPAUSE.

For many women, lifestyle modifications can make a tremendous difference in managing symptoms. This can include learning your hot flash triggers and what you can do to manage them, such as keeping your bedroom cool at night and avoiding alcohol or spicy foods.

Mood issues are also a huge issue during menopause, and treatment is available. "Any time your hormones are shifting, you're going to be more vulnerable to a mood disorder," says Jeffers. "Menopause can increase anxiety, depression, and irritability. Antidepressants or cognitive behavioral therapy can be very helpful."

MYTH:

HORMONE THERAPY IS UNSAFE

For women who are under age 60 and do not have a family history of breast cancer, menopause hormone therapy is safe and often beneficial. It is very helpful with controlling hot flashes and can prevent some of the conditions a woman becomes at risk for after menopause, such as osteoporosis.

By replacing the estrogen that naturally declines with menopause, women often experience symptom relief within two to eight weeks, says Dr. Dunham. "We always use the medication and dose that is most effective for the patient," she says.

MYTH:

ONLY SEVERE SYMPTOMS NEED TREATMENT

Even with mild symptoms, it's worth seeking out the expertise of a menopause practitioner if you're bothered. "Some of my patients just come in to learn about what's going on with their bodies at this stage of their lives," Jeffers says. It can be a good strategy. After all, some menopausal changes, such as a loss of bone mass and early symptoms of heart disease, may only be detected through preventive screenings. "This is a great time to take stock of your health and make important changes," Jeffers says.

MYTH:

ONCE YOU'RE IN MENOPAUSE, IT'S ALL DOWNHILL

On the contrary, menopause can be among the best times in life, says Jeffers. For many women, it means no longer worrying about contraception, and if you were troubled by heavy periods or PMS, menopause cures both. "Women can emerge healthy and empowered, with a freedom and spaciousness in their lives they've probably never had before," says Jeffers.

TO FIND A CLINICIAN WHO TREATS MENOPAUSE, VISIT NYULANGONE.ORG/MIDLIFEHEALTH-MENOPAUSE OR CALL 646-987-3850.

Milestones

Straightening the Curve: A Pioneering Surgeon Completes 100th Novel Repair for Scoliosis

For the millions of youth in the US with an abnormal curvature of the spine, known as scoliosis, there have traditionally been two treatment options. One is wearing a corrective brace for years. The other is spinal fusion, in which vertebrae are joined together to straighten the spine.

Now there is a better option: a surgical alternative called vertebral body tethering, or VBT, pioneered by Juan Rodriguez-Olaverri, MD, PhD, NYU Langone's director of Early Onset Scoliosis. The novel approach restrains one side of the spine with a flexible cord threaded through titanium screws attached to the affected vertebrae, allowing the opposing side to straighten naturally as a child grows. The new procedure reduces curvature significantly without the discomfort of a brace or restricting longterm flexibility.

After joining NYU Langone in 2020, Dr. Rodriguez-Olaverri completed his milestone 100th case last May, cementing his rank among surgeons who complete the most VBT procedures nationally. And he continues to pioneer the use of CT imaging for precise placement of the screws during the procedure.

Most of Dr. Rodriguez-Olaverri's patients are athletic teen girls with a curvature of more than 50 degrees who hope to continue their pursuits. Figure skaters, gymnasts, dancers, and others have traveled internationally to seek out his care. In most cases, they are back in action four to six weeks later. "I get a lot of thank-you notes," says Dr. Rodriguez-Olaverri, "but what I really love are the videos of patients doing what they love again."

Dr. Juan Rodriguez-Olaverri, Director of Early Onset Scoliosis, helped pioneer vertebral body tethering, an alternative to spinal fusion.

TO FIND A DOCTOR WHO TREATS SCOLIOSIS IN CHILDREN, VISIT NYULANGONE.ORG/SCOLIOSISIN-CHILDREN.

Complex Cases

An 11-Year-Old, a COVID Diagnosis, and an Unexpected Plot Twist.

It was supposed to be an exciting trip to the Big Apple, but 11-year-old Fernanda Martinez, from Mexico City, could not stop coughing. Her mother, Margarita, found an urgent care close to her hotel. She expected a course of antibiotics; instead, she got a trip to the KiDS Emergency Department at the Ronald O. Perelman Center for Emergency Services.

The amount of oxygen in Fernanda's blood was dangerously low. She felt chills and then began vomiting. When a COVID-19 test came back positive, she was given steroids to boost her lung capacity, as well as other medications, but her oxygen levels never bounced back. As Fernanda's condition declined, she was moved to the pediatric intensive care unit at Hassenfeld Children's Hospital at NYU Langone, where a new symptom developed: pneumothorax, or collapsed lung. "Air was trapped between the lungs and the chest wall," explains pediatric pulmonologist Eleanor Muise, MD. "You could feel it under her skin and in her neck. Air was in all kinds of places where it did not belong."

One thing became clear: something more than COVID-19 was at play, and a CT scan of Fernanda's chest confirmed it. "We saw a mass that nearly completely blocked the main airway, or trachea, along the path that air takes getting into the lungs," says Dr. Muise.

For Fernanda, catching COVID-19 turned out to be a lifesaver, a kind of fortunate misfortune. Without it, her doctors never would have discovered the giant mass blocking air flow to her lungs. But the ordeal wasn't over yet.

To get a full view of the growth, Jamie Bessich, MD, an interventional pulmonologist, performed a highly specialized rigid bronchoscopy, placing a long metal scope into Fernanda's airway and removing a section of the mass for biopsy. Results revealed something unexpected, a salivary gland tumor, which is rarely found in children or in the trachea. "The good news was that it was a low-grade tumor, which means biologically it's less aggressive," says Elizabeth Raetz, MD, director of the Stephen D. Hassenfeld Children's Center for Cancer and Blood Disorders.

The bad news was that the tumor had infiltrated tissue surrounding the trachea, which made it particularly challenging to remove. Fernanda's care team called in two renowned physicians. Pediatric surgeon Jason Fisher, MD, director of the Pediatric ECMO Program, would use a form of life support called extracorporeal membrane oxygenation (ECMO) to do the job of Fernanda's lungs long enough to allow the mass to be removed. For that job, the team tapped thoracic surgeon Robert Cerfolio, MD, who has performed the most robotic surgeries for lung conditions in the world. With Fernanda on ECMO, Dr. Cerfolio performed minimally invasive robotic surgery and removed the entire tumor. This included the affected portion of the trachea—a ring that resembled a piece of rigatoni—and sutured the two ends of the trachea together.

"This procedure could not have been done at any other children's hospital," says Dr. Fisher. "Because we had the expertise to do it robotically, the tumor was removed with only four small incisions, and it took less than an hour and a half." Hassenfeld Children's Hospital is a Level 1 Children's Surgery Center, a verification awarded by the American College of Surgeons to an elite group of children's hospitals that are uniquely skilled and equipped to provide safe surgical care of the highest quality for children.

Within weeks, Fernanda returned home to Mexico and resumed her normal schedule, going to school and practicing gymnastics. "Fernanda could have asphyxiated, or the tumor could have ruptured," says Margarita. "But her care team at NYU Langone quickly brought together so many resources. It was truly amazing. We were so far away from home, yet we couldn't have been at a better place."

Margarita Martinez with her 11-year-old daughter Fernanda

"Fernanda's care team at NYU Langone quickly brought together so many resources. It was truly amazing. We were so far away from home, yet we couldn't have been at a better place."

Margarita Martinez, mother of Fernanda, who was diagnosed with a rare tracheal tumor

TO FIND A PEDIATRIC SPECIALIST, VISIT NYULANGONE.ORG/HASSENFELDDOCTORS OR CALL 646-929-7970.

MATEO SALCEDO

Future Physicians

Artificial Intelligence Supercharges Learning

Lily Ge, a first-year medical student at NYU Grossman School of Medicine, is making speedy progress on her lessons. When working to memorize details from her latest anatomy module, she flips through a virtual microscope that automatically pans to the organs she's currently studying. To help wrap her mind around how different systems in the body interact and connect, she manipulates a virtual 3-D body, zooming in to see "what loops behind what," she says. If it seems as if the tools were tailored just for her, that's because they are.

Ge's class is the first to participate in a pioneering approach to medical education called Precision Education, now under way at NYU Grossman School of Medicine. Partly funded by the American Medical Association, the initiative uses artificial intelligence (AI) to tailor curriculum and study aids to each student's learning style and goals. "Unlike a one-size-fits-all curriculum, Precision Education takes into account the complex mechanisms underlying each individual's goals and needs in a way that can help improve learner outcomes and, by extension, patient outcomes," explains Marc Triola, MD, associate dean for educational informatics, and the founding director of the Institute for Innovations in Medical Education.

On the surface, students may never notice the hand of AI. The system, which relies on a type of computational power called machine learning, works behind the scenes of the student portal. It crunches data on an individual's academic record and their practical experience—patients seen, performance during

CONTINUED ON P. 22

"Because the pace of our curriculum moves so fast, we're always looking for ways to figure out what we should be doing right now, what we should maybe stop doing, and pivot quickly," says Lily Ge, a first-year medical student at NYU Grossman School of Medicine.

"Unlike a one-size-fits-all curriculum, our AI-driven training tools take into account the complex mechanisms underlying each individual's goals and needs in a way that can help improve their outcomes and, by extension, the outcomes of patients."

Marc Triola, MD, associate dean for educational informatics, and the founding director of the Institute for Innovations in Medical Education

KARSTEN MORAN

CONTINUED FROM P. 20

procedures, professor feedback—to guide and course-correct throughout their academic journey. If a student is unsure of their specialty, for example, a tool for early career exploration taps predictive analytics to suggest electives. If a student regularly searches for a particular condition, an AI tool will surface additional videos, journal articles, and other info about it—the same way YouTube knows to serve cat lovers cute feline bloopers. Students can also mix-and-match how they absorb new information, so visual learners can read lectures, auditory learners can listen, and so on.

For clinical experience, the algorithms draw upon de-identified patient data extracted through Epic, NYU Langone Health's electronic health records system, to help students hone their clinical decision-making skills. "Along with extensive dashboards and tools to see and understand this data—that's something that most other medical schools, trainees, and their coaches do not have access to," says Dr. Triola. "The goal is to help students become the best doctors they can be and to make good choices about which electives and opportunities they want to explore on their journey to getting there," he says.

As NYU Grossman School of Medicine completes its first year with the Precision Education tool kit, Dr. Triola and team are continually incorporating feedback from both students and educators to improve and expand the tools. The impact of Precision Education is expected to reach far beyond the walls of NYU Grossman School of Medicine, with other top medical schools seeking Dr. Triola's expert counsel on how to implement similar tools into their own curriculum.

The next big step is bringing the AI-driven model to residents. NYU Langone has already deployed an app called NoteSense, developed by Verity Schaye, MD, assistant dean for education in the clinical sciences, and director of integrated clinical skills, which uses a type of AI called natural language processing to read treatment notes, provide feedback and track improvement among residents. "Our AI learning tools are even more applicable to new doctors, because unlike a medical student who's trying to learn the entirety of medicine, residents can focus in on a clinical specialty," Dr. Triola says. "That can really help with the 'precision' of Precision Education."

The Extra Mile

Brain Surgeons Return an Aspiring Rock Star to the Stage. One Doctor Even Joined Him.

It isn't every day that a physician gets to share the stage with an up-and-coming rock star. But August 13, 2022, was no ordinary day for Jesse Kinch, the first and only winner of a 2014 TV series called *Rising Star*, and Todd Carpenter, MD, a radiation oncologist at NYU Langone Hospital—Long Island. When Kinch, a singer and guitarist, took the stage that night at the Tilles Center for the Performing Arts on Long Island, it was his first major performance since being diagnosed with a brain tumor in January 2021.

Kinch, a 28-year-old from Seaford, NY, first met Dr. Carpenter that April, and when he learned that the physician was a bass guitarist who shared his love of rock music, he invited Dr. Carpenter to play with him once he recovered. Dr. Carpenter enthusiastically accepted. "We blew the roof off," says Kinch. "When Dr. Carpenter was on stage with me, I kept thinking about how far I had come."

Kinch was also thinking of his guests at the event, a performance that was as much a personal comeback as a professional one. Among them were his father, Rick, and mother, Adrienne, a 30-year veteran nurse at NYU Langone Hospital—Long Island; his neuro-oncologist, Marissa Barbaro, MD; and one of his neurosurgeons, Lee Tessler, MD, the hospital's chief of neurosurgery, who collaborated with John G. Golfinos, MD, the Joseph P. Ransohoff Professor and chair of the Department of Neurosurgery at NYU Langone Health.

When Kinch entered surgery for his brain tumor on February 8, 2021, he knew that he was in the best of hands. Drs. Tessler and Golfinos both specialize in the treatment of gliomas, the type of tumor he had been diagnosed with. And Kinch's mother had cared for many of Dr. Tessler's patients in the postanesthesia care unit.

Because gliomas can infiltrate healthy brain tissue, the doctors decided to perform the surgery at NYU Langone's Manhattan campus, where the Kimmel Pavilion is equipped with an intraoperative MRI that provides real-time views of the surgical progress *(see page 3)*. In addition, because the tumor resided in an area on the left side of the brain that controls the fine motor movement of Kinch's guitar-strumming right hand and is near the fibers that control voice, they decided the best approach would be an awake craniotomy. "Jesse was able to talk to us during the operation so that we could test different areas of the brain to limit any neurological damage," explains Dr. Tessler. "Nearly two years later, he's doing fantastic."

TO FIND A DOCTOR WHO TREATS BRAIN CANCER, VISIT NYULANGONE.ORG/PCC OR CALL 833-698-5722.

NYU Langone is the #1 Hospital in the US for Neurology and Neurosurgery

Two years after brain surgery at NYU Langone, musician Jesse Kinch (right) made his first major performance at the Tilles Center for the Performing Arts on Long Island, where he was joined onstage by his radiation oncologist, Dr. Todd Carpenter, who also plays the guitar.

STEVE FENN PHOTOGRAPHY

Big Ideas

On Long Island, an Innovative Program Brings the Hospital to the Home

As hospitals nationwide grapple with overcrowding, NYU Langone Hospital—Long Island is on the forefront of an innovative solution. The idea is deceptively simple: help a subset of patients who would otherwise be hospitalized receive inpatient care at home. But delivering the highest quality of acute care to patients in the comfort of their own home without compromising safety demands an extraordinary level of expertise, and NYU Langone Hospital—Long Island, part of the top academic health system in the nation, is uniquely qualified to set the standard.

In September 2021, its pilot program, called Home Hospital, rolled out with an initial capacity of four patients after earning speedy approval from the Centers for Medicare & Medicaid Services (CMS). The government agency launched the regulatory framework for providing care to patients outside a traditional hospital in 2020 amid skyrocketing cases of COVID. Joseph Greco, MD, senior vice president, chief of hospital operations, and Eve Dorfman, vice president of home health and hospital medicine services, were quick to seize on the opportunity and began crafting a unique approach—one that would deliver value even as the pandemic subsided.

At NYU Langone Hospital—Long Island, patients with a Medicare health plan who visit the Emergency Department with acute but stable conditions—things like pneumonia, cellulitis, or dehydration—are evaluated by Emergency Department doctors and a nurse for enrollment in the Home Hospital program. Those who qualify must live within 30 minutes of the hospital, and meet a series of other criteria. "We make sure patients are independent or have a dedicated caregiver, that they have heat and electricity, and that their home has safety measures in place," says Dorfman.

Unlike most other programs, NYU Langone Hospital—Long Island has tapped its own physicians and nurses to build the program and manage patient care rather than outsourcing staff to a third party. Each patient enrolled in the Home Hospital program receives a tablet for conducting video visits and a wearable device that tracks vital functions like pulse rate, oxygen saturation, and temperature, and transmits the data in real time to the program's command center, which can coordinate streamlined access to NYU Langone physicians, nurses, and specialty consultations 24/7. A hospitalist meets remotely or in person with each patient daily, and a field nurse visits at least twice daily to provide hands-on care. "We have the resources and expertise to deliver the same high standard of care patients receive in the brick-and-mortar hospital," says Christopher Caspers, MD, medical director of the Home Hospital program.

The concept of a "hospital without walls" was first trialed by Johns Hopkins more than two decades ago, leveraging philanthropic support since the approach wasn't covered by medical insurers. Results from this and other pilot studies have been promising. Data from the Agency for Healthcare Research and Quality, charged with improving the safety and quality of healthcare, shows that the model results in better survival rates and fewer infections and readmissions compared with inpatient hospital stays.

Now that CMS has provided a waiver for coverage—likely to become permanent—and approved more than 200 programs, the model is certain to grow. NYU Langone Hospital—Long Island plans to double the number of patients in the Home Hospital program by 2024, and discussions are under way to replicate the model at other NYU Langone campuses.

Faith Lynch, DNP, director of acute and home dialysis services, who oversees the program's nurses, says patients have been highly receptive to the hybrid care model, with more than 60 so far choosing to recover at home. "We're providing the same care that patients would receive in the hospital, but they can eat their own food, sleep in their own bed, use their own bathroom and shower," she explains. "Plus, you have unlimited visiting hours."

MELINDA BECK

FOR INFORMATION ABOUT THE HOME HOSPITAL PROGRAM AT NYU LANGONE HOSPITAL—LONG ISLAND, VISIT NYULANGONE.ORG/HOMEHOSPITALPROGRAMLI.

JONATHAN KOZOWYK

NYU LANGONE HEART TAKES A UNIFIED STAND AGAINST THE NATION'S LEADING KILLER

Bad news first: Most of us will confront heart trouble at some point in our lives. Whether it's high blood pressure, high cholesterol, an irregular heartbeat, or chest pains, cardiac problems are pervasive and cut across gender, race, and ethnicity—even age. Heart disease reigns as the nation's leading killer, accounting for one in five deaths in the US.

Now for the good news: A steady march of medical advances is helping a growing number of people live longer, healthier lives. NYU Langone Heart, a collaboration between the institution's top-ranked cardiology and cardiac surgery departments, was formed to systematically deliver the latest resources, best practices, and interventions to each of NYU Langone's 1 million cardiac patients seen annually. Its founding is part of an ambitious plan to unify a broad range of cardiac specialists practicing across one of the most diverse health systems in the country—one that includes more than 300 physicians focusing on heart disease.

"It's about leveraging NYU Langone's tremendous upward trajectory to aim even higher for the benefit of all our patients," explains Mathew R. Williams, MD, chief of the Division of Adult Cardiac Surgery, who co-leads the initiative. To achieve this, multiple committees composed of physicians, nurses, and hospital administrators review an exhaustive list of vital metrics to spot areas in need of upgrades or more support.

"With NYU Langone Heart, all of our patients will know that whether they're in Delray Beach or Brooklyn or Long Island, their care extends far beyond one individual physician," says Larry A. Chinitz, MD, clinical director in the Leon H. Charney Division of Cardiology at NYU Grossman School of Medicine, who co-leads the program with Dr. Williams. "Every patient is supported by a team of experts that coordinates care based on what is best for their unique circumstances."

Mathew R. Williams, MD, chief of adult cardiac surgery, co-leads NYU Langone Heart, an initiative that integrates adult cardiology and cardiac surgery programs across NYU Langone Health's six inpatient locations and 70 outpatient cardiac practices.

BEST HOSPITALS U.S.News & WORLD REPORT CARDIOLOGY & HEART SURGERY 2022-23

U.S. News & World Report's "Best Hospitals" ranks NYU Langone Health among the top 5 hospitals in the country for cardiology and heart surgery.

FOR INFORMATION ABOUT NYU LANGONE HEART, VISIT NYULANGONE.ORG/HEART OR CALL 646-929-7800.

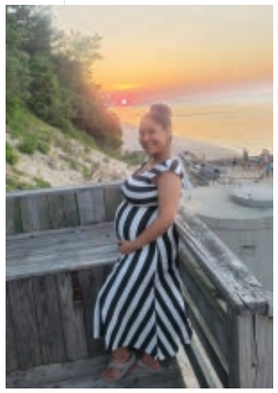
Timelines

The Hardest, Most Miraculous First Year of Life

12 MONTHS IN THE LIFE OF A BABY BORN WITH A RARE CONDITION CALLED CHAOS

Yadi Martin was 24 weeks pregnant when she and her husband Jamaal learned that their son had a rare condition. Called CHAOS, for congenital high airway obstruction syndrome, the anomaly makes it impossible for air to reach the lungs. It has affected fewer than 100 babies in the US since 1989; most did not survive. After a complex birth by cesarean section, the Martins' son Aydin would spend nearly six months in the neonatal intensive care unit at Tisch Hospital and undergo several more lifesaving surgeries. More than a year later, and despite steep odds, this child born into literal chaos continues to thrive.

May 2021



THE DIAGNOSIS

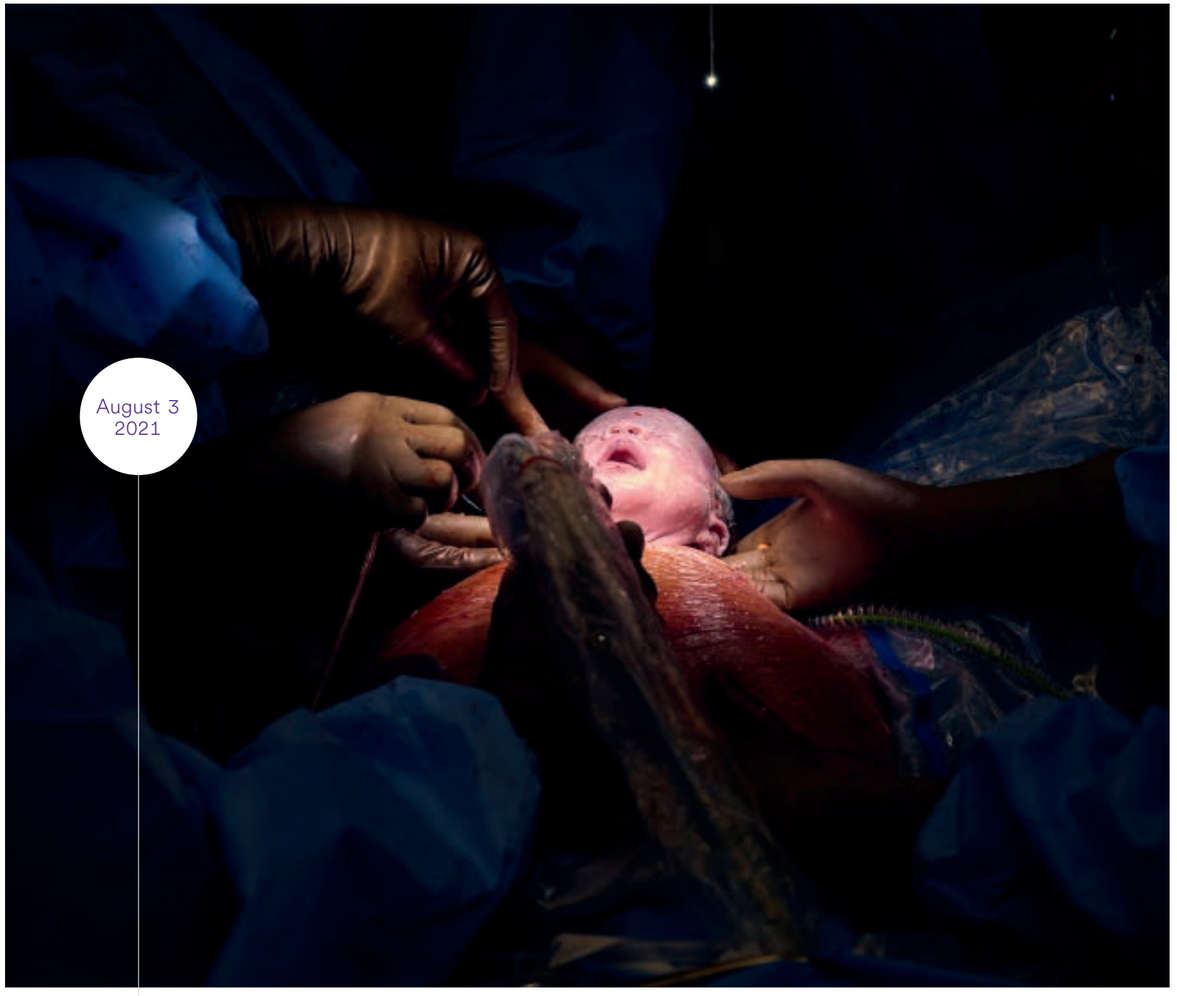
Even after they learned of their unborn child's condition, the Martins believed their baby would survive. Yadi had already experienced four miscarriages but felt certain of Aydin's healthy future. "We believe this is our golden child," she says. "He is our chosen one." The couple decided to name the baby Aydin Idris, which means "enlightened, smart, and studious" in Arabic.

August 3 2021

THE BIRTH

The Martins arrived at NYU Langone for a surgical birth like no other. After delivering only the baby's head and shoulders, a team of more than 25 specialists performed a complex and daring procedure called ex utero intrapartum treatment, or EXIT.

August 3 2021



THE "EXIT" STRATEGY

Maternal–fetal medicine specialist Ashley Roman, MD, co-director of the Fetal Diagnosis and Treatment Program, and her team performed the EXIT procedure, partially delivering the baby. "We had to time it all perfectly, because if the placenta separated before the airway could be established, the baby would not survive," Dr. Roman says.

OPPOSITE PAGE: LEFT, COURTESY OF YADI MARTIN; RIGHT, JOE CARROTTA FOR NYU LANGONE HEALTH. THIS PAGE: JOE CARROTTA

TO FIND A PEDIATRIC SPECIALIST, VISIT NYULANGONE.ORG/HASSENFELDDOCTORS OR CALL 646-929-7970.

August 3
2021

BREATH IS LIFE

During Aydin's birth, doctors quickly discovered a worst-case scenario: His airway was totally blocked. With the newborn still receiving oxygen from his mother via the umbilical cord and placenta, surgeon Scott Rickert, MD, placed an oxygen tube through an incision in the neck and into the lungs. After delivery, another crisis struck: Aydin's heart stopped beating and he went into cardiac arrest. Pediatric surgeon Jason Fisher, MD, placed Aydin on a form of life support called extracorporeal membrane oxygenation to take over the work of his heart and lungs until they could function on their own.

Sept 7
2021

THE REUNION

Aydin recovered in the NICU at Tisch Hospital, an elite unit long recognized for delivering the highest level of prenatal and newborn care. "Aydin was as critically ill as you can be," says neonatologist Robert M. Angert, MD. He received around-the-clock care from two nurses, regular assistance from respiratory, physical, and occupational therapists, and additional support from a nutritionist, music therapist, and other specialists provided through the Sala Institute for Child and Family Centered Care.

More than a month after his birth, Yadi and Jamaal held their son for the first time.

January
19
2022

"GRADUATION"

After 169 days in the NICU and numerous surgeries—including correcting a heart defect and repairing a malformation in the digestive tract—Aydin was declared healthy enough to leave the hospital. He spent the next six months in a rehabilitation center, continuing his recovery. "To see him leave felt like a graduation," says Dr. Angert.

OPPOSITE PAGE: TOP, JOE CARROTTA; BOTTOM, YADI MARTIN.
THIS PAGE: LEFT AND TOP RIGHT, YADI MARTIN;
BOTTOM RIGHT, JAMES YARUSINSKY FOR NYU LANGONE HEALTH.

July 11
2022

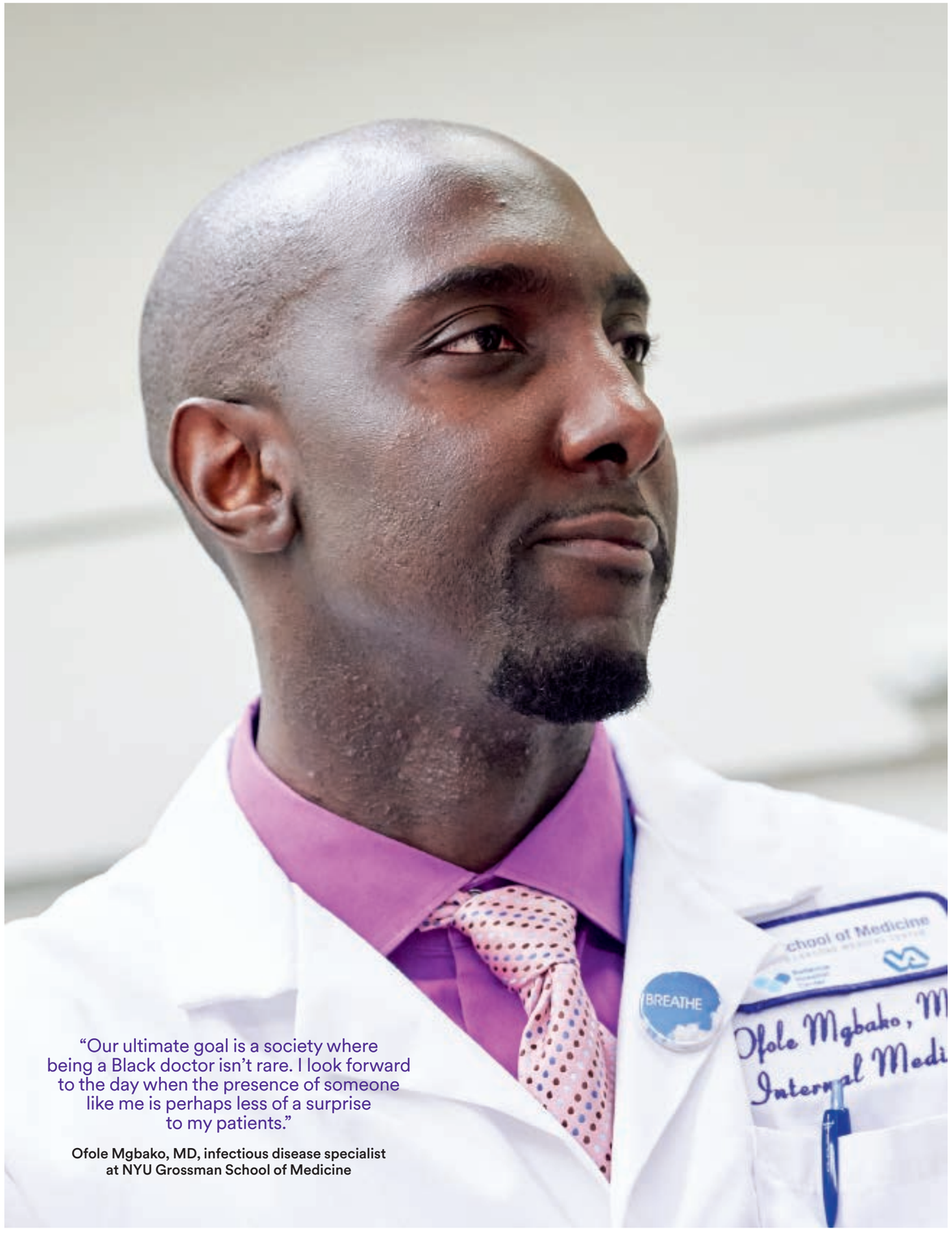
HOME, AT LAST

At 11 months old, Aydin arrived home, and his parents finally got to witness firsthand what so many dedicated doctors and nurses had experienced. "When he was in the hospital, people would say, 'He wakes up so happy.' To be able to see it ourselves, it melts our hearts," says Jamaal. "Seeing him smile is the best part of the day."

July 22
2022

HAPPY BIRTHDAY, AYDIN!

Shortly before his first birthday, Aydin and his parents returned to Hassenfeld Children's Hospital for a reunion. "I feel so lucky to help families like the Martins have a baby and achieve their goals," says Dr. Roman. Today, nearly two years after his birth, Aydin has begun walking and learning sign language. His parents find inspiration in his resolve. "If he can deal with all of this, how do we not do it?" says Yadi. "He's just happy, and every day, he lets us know how happy he is."



"Our ultimate goal is a society where being a Black doctor isn't rare. I look forward to the day when the presence of someone like me is perhaps less of a surprise to my patients."

Ofole Mgbako, MD, infectious disease specialist at NYU Grossman School of Medicine

JULIANA THOMAS

ANDRÉ MORA

Leadership

Honoring a Champion of Diversity in Healthcare

"My name is Dr. Mgbako, and I'm your doctor," said the physician as he greeted his new patient, a Black gay man in his mid-50s.

"I've never had a doctor that looks like you," the man replied. "Where are you from, young man?"

Dr. Ofole Mgbako explained that he is of Nigerian descent, born and raised in New Jersey.

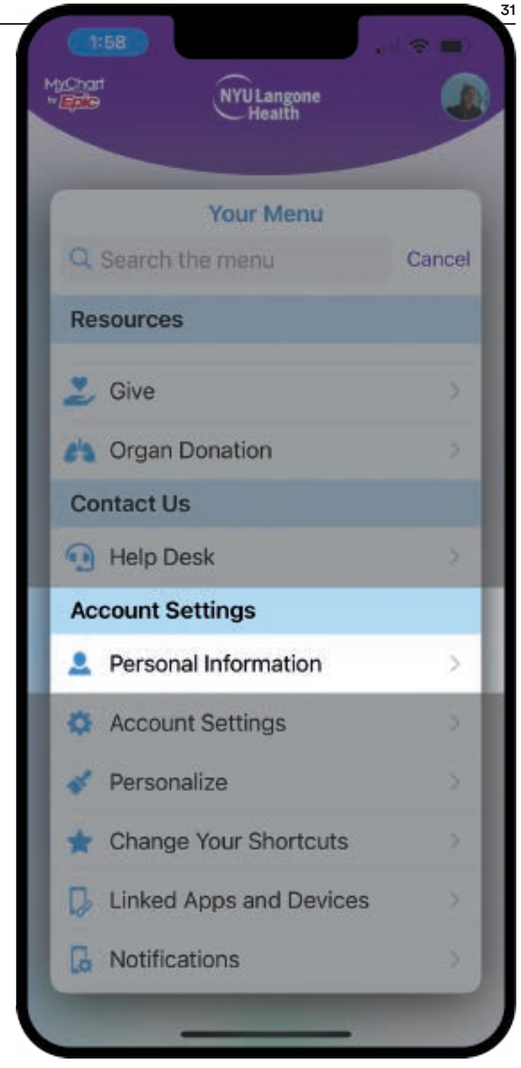
"You mean to tell me I have a young, *Black* doctor?" the man said. "Now we are in business!"

The story, which appeared in an essay published in the *Journal of the American Medical Association*, is one of many patient encounters Dr. Mgbako has recounted in publications as varied as *The Lancet*, *The New Yorker*, and *Safundi: The Journal of South African and American Studies*. "Writing is how I process experiences that are difficult to understand," says Dr. Mgbako, assistant professor in the Departments of Medicine and Population Health at NYU Grossman School of Medicine. One of those mysteries, he explains, is the dearth of Black physicians in the US. Fewer than 5% of the physicians in America are Black, a state of affairs that has been shown to compromise access to quality healthcare for Black patients.

Dr. Mgbako, an infectious disease specialist who joined NYU Langone in 2017 after completing his residency here, is particularly interested in how trauma, racism, and homophobia impact HIV-related outcomes, and he has focused his research on behavioral interventions for racial, gender, and sexual minorities along the HIV care continuum. "As a proud gay Black man who understands that the intersections of identity make for unique experiences, particularly in healthcare, it's painful for me to see any young man of color die from AIDS," he says. "That shouldn't happen in 2023."

In addition to serving as section chief of infectious diseases at NYC Health + Hospitals/Bellevue, Dr. Mgbako is a clinical co-leader of NYU Langone's Institute for Excellence in Health Equity, whose mission is to advance health equity research, clinical care, and medical education. On November 14, 2022, the Association of American Medical Colleges honored Dr. Mgbako for his leadership with its Herbert W. Nickens Faculty Fellowship, awarded each year to one junior faculty member nationally who demonstrates leadership in addressing inequities in medical education and healthcare.

Dr. Mgbako says he's keenly aware that his presence, especially among Black people, often represents something beyond himself. "On one hand, that makes me happy," he says. "But on the other, it reminds me how far we are from racial justice in healthcare and how much work needs to be done. Our ultimate goal is a society where being a Black doctor isn't rare. I look forward to the day when the presence of someone like me is perhaps less of a surprise to my patients."



To-Do's

WE ASK BECAUSE WE CARE

NYU Langone Health is committed to delivering the highest standard of care to our diverse family of patients. To help us strengthen our inclusive culture and achieve the best health outcomes for all, we ask patients to take a few minutes to review and update their personal information through their NYU Langone MyChart account. After you log in, click on the Menu icon and then scroll down to Account Settings. Click "Personal Information" and edit the "Details About Me" section. If you don't have a MyChart account, you can create one by downloading our app. More questions about why we ask? Please visit: nyulangone.org/patientdatafaq.

Scan this code to download the NYU Langone Health app today.

The Gift of Life

How Whole-Body Donation Has Sparked a Revolution in Transplantation

Tim Capuano, whose mother, Alva, donated her body to advance the science of transplantation

TONY LUONG

When Alva Capuano was discovered unconscious in her living room, her husband, Richard, and then paramedics did everything possible to get her heart beating again. But by the time it did, her brain had experienced irreversible damage. Her family accepted that Alva, 64, was gone. Their sorrow fueled a determination to fulfill her last wish: As the recipient of a donated pancreas and kidney, Alva had hoped to become an organ donor herself.

Alva's heart was kept beating with the aid of a ventilator while the family worked with LiveOnNY, a nonprofit transplant matchmaker, to find a recipient for her organs. Hours and days went by, but no matches were found. The chance for Alva to save the life of someone else seemed to dim—until an unprecedented phone call.

Robert Montgomery, MD, DPhil, director of the NYU Langone Transplant Institute, explained to Alva's family that instead of donating individual organs, they could donate her entire body to science. She would become the second recipient of a genetically modified pig heart, the next vital step in groundbreaking research at NYU Langone to find an alternative source for heart transplants. "If no one would have to die waiting for a heart transplant, imagine the impact Alva's life would have on so many other lives," Dr. Montgomery explained.

Alva's son Tim knew this opportunity would mean everything to his mom. "We all agreed that my mom would be happy to know that she could contribute to something so much bigger than herself," he says.

On July 6, 2022, four days after she was declared brain-dead, Alva became NYU Langone's second recipient of a heart xenotransplant. The first such procedure, just a month before, had been a success, with the recipient of a genetically modified pig heart surviving for 72 hours without any signs of organ rejection. This follow-up procedure would confirm that the results were replicable.

The xenotransplant surgical team was led by Nader Moazami, MD, and Alex Reyentovich, MD, the surgical and medical directors of heart transplantation, respectively, at the Transplant Institute. Alva's transplanted heart functioned normally immediately.

"The fact that the body did not reject the organ shows that the innate immune system, which is the first line of defense, was not triggered, and the genetic modifications were successful," says Dr. Montgomery. "Seeing a pig heart pounding away inside of the chest of a human being is one of the most incredible things I have ever seen." In addition, Alva didn't need devices to keep the heart pumping—another sign that Alva's body accepted the organ.

After three days, the team turned off Alva's ventilator as planned, and her body shut down. The success of her surgery allows the research to move to the next phase: a 30-day trial in a brain-dead donor to see whether the adaptive immune system, the body's second line of defense, rejects the organ.

Even though it's still early days for pig heart transplants, to Dr. Montgomery, the impact of the Capuano family on the future of transplantation is immeasurable. "These studies have set in motion something that is going to change transplantation in a profound way," he says. "Their gift will be multiplied many times."

To support the Transplant Institute's research in the memory of Alva Capuano, visit nyulangone.org/give/fundraise/alvacapuano.

Dr. Robert Montgomery (top left) called Richard Capuano (right) to ask if he would consider donating his wife's body to advance the science of xenotransplantation. "If no one would have to die waiting for a heart transplant, imagine the impact Alva's life would have on so many other lives," he explained. At right: Richard with wife Alva, who died of cardiac arrest in July 2022.

TO FIND A TRANSPLANT SPECIALIST, VISIT NYULANGONE.ORG/TRANSPLANTINSTITUTE.

High-Fives, Huzzahs, and Thumbs-Up

A ROLL CALL OF AWARD WINNERS AND HONOREES

✊

✏️
Neurosurgery Publications, a group of three neurosurgery journals, has a new editor-in-chief: **Douglas Kondziolka, MD,** professor of neurosurgery.

👏
Neurosurgeon **Howard Riina, MD,** whose most recent work includes the development of minimally invasive devices to treat aneurysms, was selected to a six-year term as a director of the American Board of Neurological Surgery.

👸
The American Academy of Arts and Sciences has elected **Dean and CEO Robert I. Grossman, MD,** to its latest class of fellows.

👏
Cell biologist **Gira Bhabha, PhD,** received the 2023 American Society for Biochemistry and Molecular Biology Early-Career Leadership Award in recognition of her commitment to advancing the careers of women in biochemistry and molecular biology.

🤖
The W.M. Keck Foundation has granted neurosurgeon **Eric Oermann, MD,** and neurologist **Biyu He, PhD,** $1.2 million to create an AI model that can draw deeper meaning from brain imaging.

🤩
Biochemist **Shohei Koide, PhD,** director of cancer biologics at the Perlmutter Cancer Center, has been inducted into the National Academy of Inventors for his work designing and building synthetic proteins.

😳
Cardiologist **Edward Fisher, MD, PhD, MPH**, was awarded a $12.8 million grant from the National Heart, Lung, and Blood Institute. His aim: to examine the dysfunction of macrophages—a type of white blood cell—in atherosclerosis and cardiometabolic disease.

🧓
In a career spanning more than four decades, **Professor of Psychiatry John Rotrosen, MD,** has helped develop new therapies for addictive disorders, ADHD, schizophrenia, and movement disorders. His pioneering work continues with a new $12.2 million research supplement from the National Institute on Drug Abuse.

🤗
Scott Sherman, MD, professor of population health, medicine, and psychiatry, and **Danil Makarov, MD**, associate professor of urology and population health and a member of Perlmutter Cancer Center, received a $5 million grant from the NIH, as part of the White House Cancer Moonshot initiative, to create a new center to study telehealth for veterans needing cancer care.

😷
We're just beginning to understand the long-tail effects of COVID infection. Neuropathologist **Thomas Wisniewski, MD,** will use a new $6.9 million grant from the National Institute on Aging to study Alzheimer's-related biomarkers in people recovering from COVID.

🤗
As part of the 2022 class of Presidential Leadership Scholars, **Rabia De Latour, MD,** assistant professor of medicine, received mentorship from former presidents Bill Clinton and George W. Bush for her work to improve hospital sustainability.

Kudos to All: The Institutional Accolades Keep Coming

🤲
For the fifth consecutive time, NYU Langone received an **A rating from Leapfrog** for patient safety, an achievement claimed by all four hospitals since the fall of 2020.

🌟
NYU Langone is now the only health system in New York City to receive **Magnet designation** across all its hospitals for excellence in nursing. NYU Langone Hospital—Brooklyn is the first hospital in the borough of Brooklyn to receive the honor.

🏆
According to Vizient, Inc., the nation's largest healthcare performance improvement organization, NYU Langone is now the nation's **#1 comprehensive academic medical center** and the **#1 ambulatory system for quality and safety.**

🏳️‍🌈
A hat trick of wins from *Newsweek*: NYU Langone made the top 100 of the **World's Best Hospitals** list for the third year running, was named one of **America's Greatest Workplaces for Diversity**, and snagged a spot among the **World's Best Smart Hospitals** thanks to its work in virtual care, digital imaging, AI, and robotics.

👶
Hassenfeld Children's Hospital at NYU Langone is now one of only two hospitals in New York named a **Level 1 Children's Surgery Center** by the American College of Surgeons.

🏫
The Liaison Committee on Medical Education has granted NYU Long Island School of Medicine **full accreditation**, formalizing its provisional accreditation to educate students and conduct research. NYU Long Island School of Medicine stands apart as the only medical school in the country to offer a tuition-free, three-year degree in primary care.

60-Second Science

HOW A SIMPLE QUESTION INSPIRED NEW INSIGHTS INTO A PEDIATRIC DISEASE

We all need oxygen for survival. It fuels every cell in the human body. But how, exactly, does it work its magic within our cells? That seemingly basic question, pursued by radiation oncologist Michael Pacold, MD, PhD, has led to the recent discovery of an entirely new chemical pathway in humans—one that has inspired a potential cure for a rare disease in children and a new therapeutic target for pancreatic and brain cancers.

"We did not go into this research planning to study a childhood neurodevelopmental disease or find a potential treatment for cancer of any sort," says Dr. Pacold. "That emerged when we started looking into it, but the goal was always very simple: find something fundamental to biology."

Dr. Pacold's lab began studying the role of oxygen in cancer cells in part because low oxygen levels can drive cancer progression. Molecular pharmacologist Robert Banh, PhD, a former postdoctoral researcher with Dr. Pacold who now has his own lab at NYU Langone, used a chemical tag to track how oxygen is used by cellular enzymes and incorporated into molecules. It turns out that roughly one-fourth of the molecules tagged with oxygen were unknown in mammalian cells.

From there, the team discovered that an enzyme called HPDL drives a series of chemical reactions previously unreported in mammals. The HPDL pathway starts by making a metabolite called 4HMA—which took up more labeled oxygen than any other molecule—and ends by making part of the powerful antioxidant (and popular supplement) coenzyme Q10.

At the same time, other researchers were puzzling over the first reports of pediatric patients carrying variants in the gene encoding the HPDL enzyme. The variants were closely associated with a rare, progressive disorder that is marked by seizures, leg stiffness, abnormal body movements, and severe neurodevelopmental delays.

Guangbin Shi, a senior research assistant in Dr. Pacold's lab, is now investigating if coenzyme Q10 can treat this disorder. If further testing in mice holds up, Dr. Pacold's lab could collaborate with physicians to assess whether coenzyme Q10 significantly reduces symptoms in children with the disease. Meanwhile, other lab members are investigating how to turn off the HPDL enzyme. "When you delete it, at least in a subset of pancreatic cancers, the cancers fail to take off," Dr. Pacold says. An initial screen suggests that some compounds can indeed inhibit the enzyme, opening the door to a potential cancer treatment as well.

Says Dr. Pacold, "There may be a lot more to this story than we ever imagined."

NYU Langone Health

550 First Avenue
New York, NY 10016

NYU LANGONE HEALTH NEWS

Kenneth G. Langone CHAIR, BOARD OF TRUSTEES
Robert I. Grossman, MD DEAN AND CEO
Debbie Cohn INTERIM SR. VICE PRESIDENT, COMMUNICATIONS AND MARKETING
Nicole Dyer DIRECTOR OF PUBLICATIONS
Thomas A. Ranieri, David Sparrow SENIOR EDITORS
Cynthia Ramnarace DIGITAL MANAGING EDITOR
Kate Ferguson ASSOCIATE EDITOR
Modus Operandi Design CREATIVE DIRECTION
Joshua Bright COVER PHOTOGRAPH

► For more information about NYU Langone Health, visit us online at **nyulangone.org**.

Tell Us! We want to hear from you. Submit your comments, story ideas, and subscription requests to publications@nyulangone.org.