Neurosurgeon Nicholas Theodore, M.D., M.S., is making spinal surgery safer, quicker and more accurate.

"The combination of imaging, surgery and robotics will fundamentally change the way we do surgery."
WHAT DOES IT MEAN TO BE A LEADER?
At Johns Hopkins Medicine, it means delivering the promise of medicine. Part of delivering on that promise is a commitment to bettering the lives of patients, including through advances in medical technology.

Nicholas Theodore, M.D., M.S., director of the Johns Hopkins Neurosurgical Spine Center, is one embodiment of this commitment. Theodore, who appears on our cover, co-invented an image-guided robot that has revolutionized spine stabilization surgery—making it safer, quicker and more accurate. This advancement has already benefited many people, including Rebecca Passy, of Mexico City, the first international patient to have surgery using the robot (see page 7).

Each year at Johns Hopkins Medicine International, we welcome thousands of patients like Passy from across the globe. Our team coordinates every aspect of their care while they receive treatment at Johns Hopkins. We know patients have more successful care experiences when they have a guide who understands their cultural background and can help lead them through a difficult and emotional journey far from home. At Johns Hopkins Medicine International, patients receive personalized service from our team of care coordinators, devoted people like Mohammed Altaee, whom you’ll meet on page 11, along with one of the families he supported during their time at Johns Hopkins.

Also in this issue of Leader, you’ll read about:

- **CUTTING-EDGE BREAKTHROUGHS**—Discoveries by Johns Hopkins researchers aim to improve health care for all.
- **RAISING HEALTH CARE STANDARDS WORLDWIDE**—Johns Hopkins has built sustainable collaborations with health systems around the world to bring the best care where it’s needed most.

Through these stories, we hope to offer a glimpse of how we deliver the promise of medicine to you no matter where you are in the world.

All our best for your health,

CHARLES WIENER, M.D.
President, Johns Hopkins Medicine International
Professor of Medicine and Physiology, Johns Hopkins University School of Medicine

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Have questions? Ready to schedule an appointment? Connect with us at +1-410-220-6438 (7:30 a.m. to 5 p.m. U.S. Eastern time Monday through Friday) or hopkinsmedicine.org/international.

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FRONT AND BACK COVER: Photography by Tobias Hutzler

FOR YOUR HEALTH: All information in this publication is intended for your general knowledge only and is not a substitute for medical advice or treatment for specific medical conditions. You should seek prompt medical care for any specific health issues and consult your physician before starting a new health regimen.
Exercise as Medicine
Getting moving has powerful health perks

Numerous studies have shown the power of exercise to prevent and treat many health conditions, from cardiovascular disease to diabetes. This abundant evidence is why a multidisciplinary group of doctors at Johns Hopkins is exploring targeted ways to help people strategically use exercise to better their health.

“A goal for the future would be personalized exercise prescriptions,” says Richard Schaefer, M.D., M.P.H., assistant professor of orthopedic surgery at the Johns Hopkins University School of Medicine.

Physical inactivity is one of the biggest threats to health worldwide, but it’s a reversible problem. “There’s overwhelming evidence that exercise is important in the prevention or treatment of almost every chronic disease,” says Kerry Stewart, Ed.D., director of clinical and research exercise physiology at Johns Hopkins Medicine.

Going forward, the goal is to further promote research into the ways physical activity aids healing and to discern the optimal doses for particular individuals and conditions. Johns Hopkins clinicians and researchers, along with colleagues from other institutions, explored these topics at a recent symposium, where experts presented research on the powerful effects of exercise in preventing and managing conditions such as diabetes, glaucoma, depression and cancer.

CREATE YOUR OWN EXERCISE PRESCRIPTION
Use these tips to help you develop a sustainable activity plan. Also see page 5 for activity recommendations from the World Health Organization.

- Find activities that you enjoy. Having several choices means that you’re more likely to follow through on at least one of them.
- Exercise with friends. Going for walks or hitting the gym together as a group is more motivating and more fun.
- Squeeze exercise into your workday. Walk during your lunch break or use the stairs, not the elevator. Add in extra steps to your day with walking meetings.
- Monitor your activity. A wearable fitness tracker or a smartphone app helps you assess your progress.

THE WONDER DRUG.
EXERCISE IS FREE
AND EFFECTIVE AT
PREVENTING MANY
CHRONIC DISEASES.
Former Smoker: What’s Your Risk of Lung Cancer?

Quitting smoking is a powerful way to protect your health and can reduce your risk of lung cancer. But if you’re 55 or older and smoked heavily, or over a long period, your lung cancer risk remains elevated for 15 years after you stop smoking. Because of this increased risk, it’s recommended such former smokers undergo annual lung cancer screenings for at least the first 15 years they’re smoke-free.

“If we diagnose lung cancer at an early stage, it is potentially curable by surgery, and that is the gold standard,” says Patrick Balao, CRNP, interventional pulmonology nurse practitioner in the Division of Pulmonary and Critical Care at Johns Hopkins Medicine. “When you have advanced lung cancer, the chance of being cured is very low.”

Screening is recommended for people between ages 55 and 80 who smoked the equivalent of one pack of cigarettes daily for 30 years. A chest CT scan uses X-rays to take images of the lungs. The scan utilizes low-dose radiation but, Balao says, the benefits of catching lung cancer early outweigh any possible health risks from the radiation exposure.

After 15 years, your lung cancer risk should drop significantly and you may not need more screenings. Until then, getting annual chest CT scans is one of the best things you can do for your health.

“Making lung cancer screening available to older smokers increases the likelihood of detecting it at an earlier stage, which improves survival and quality of life,” says Balao.

New Relief for People with Stomach Disorder

People with gastroparesis, or delayed stomach emptying, battle abdominal pain, nausea and vomiting on an everyday basis. But a new endoscopic procedure developed by gastroenterologist Mouen Khashab, M.D., director of therapeutic endoscopy at Johns Hopkins Medicine, offers relief to many.

In some people with gastroparesis, the sphincter muscle at the base of the stomach doesn’t work properly, preventing digested food from reaching the intestines at a normal pace. The new procedure, known as GASTRIC PERORAL ENDOSCOPIC MYOTOMY (G-POEM), can help. The doctor uses an endoscope to cut the inner layer of the malfunctioning sphincter muscle, which allows food to leave the stomach more quickly.

About 80 percent of people respond well to the procedure. In many cases, doctors can’t determine the cause of gastroparesis, but it’s more common among people with diabetes. As type 2 diabetes becomes more prevalent worldwide, it’s likely gastroparesis cases will rise as well.

“Some people with gastroparesis are dependent on feeding intravenously, and after G-POEM we can put them back on an oral diet,” Khashab says. “Any degree of improvement reflects immediately, and extensively, on quality of life.”

**IS LUNG CANCER SCREENING FOR YOU?**

Talk to your doctor about lung cancer screening if:

- You have a history of heavy smoking (at least a pack a day for 30 years)
- You are a current smoker or former smoker who quit within the past 15 years
- You are between the ages of 55 and 80

**LEARN MORE ABOUT LUNG CANCER SCREENING:**

hopkinsmedicine.org/lunghealthlead

**THE EARLIER THE DIAGNOSIS, THE BETTER THE CHANCE THAT YOU CAN BE CURED.**

—Patrick Balao, CRNP

**HAPPIER MEALS**

After G-POEM, many people with gastroparesis experience improvement in their symptoms, allowing them to eat a more regular diet.

**KNOW THE SIGNS**

Abdominal pain, nausea, vomiting, bloating or feeling full at the start of a meal are all signs of gastroparesis. Certain foods may exacerbate these symptoms. If you experience any of these symptoms, speak with your doctor. Modifying your diet to reduce high-fiber foods—such as root vegetables and beans—and high-fat foods—including fatty meats, cream, butter and oils—may help keep your gastroparesis in check.
When Hospital Patients Move, They Improve

JOHNS HOPKINS PROGRAM ENCOURAGES MOBILITY

When a family member is in the hospital, their doctor is more likely to ask if they’ve eaten, taken their medicine or had a bowel movement than if they’ve gotten out of bed.

“When a patient is admitted to the hospital, the entire experience is set up for them to stay in bed,” says Michael Friedman, PT, MBA, director of rehabilitation therapy services and co-director of the ACTIVITY AND MOBILITY PROMOTION (AMP) program at The Johns Hopkins Hospital. “But evidence going back to the 1960s says mobility is good and bed rest is bad, especially when in the hospital.”

AMP firmly establishes the concept that a structured process to promote a culture of activity and mobility for The Johns Hopkins Hospital patients is beneficial in combating the harms of immobility and to improving health outcomes.

“Increasing physical activity while in the hospital makes it less likely people will need an extended stay at a rehab center and more likely they’ll go home safely,” Friedman says. “They’ll be closer to returning to activities of daily living. And they’re less likely to have a dip in their mobility that’s harder to come back from.”

Along with caregivers, family members play a vital role in motivating patients to meet their mobility goals.

PERSONALIZED GOALS

At The Johns Hopkins Hospital, the health care team and family members help patients progress through the AMP program at an individualized pace. The program is designed to:

- Provide the personnel and equipment necessary to ensure the patient is safe when moving
- Increase overall time out of bed
- Progressively increase the distance walked daily

Whether you get enough exercise in middle age can affect your risk of heart failure, according to research Johns Hopkins Medicine published in the journal CIRCULATION.

When a person has heart failure, the heart isn’t strong enough to pump blood throughout the body to deliver oxygen where it’s needed, which can lead to weakness, breathing difficulties, hospitalization and possibly death. Some 26 million people worldwide have heart failure, and that number is growing.

Johns Hopkins researchers studied data from more than 11,000 U.S. adults ages 45 to 64 and found that over a six-year period people in this age range who consistently exercised for at least 150 minutes per week (as recommended by global health organizations) had a 31 percent lower risk of heart failure over the next two decades than those who were consistently inactive. Importantly, those who went from no activity to recommended levels over six years had a 23 percent reduction in heart failure risk.

“It’s important that everybody realizes it’s not too late to start being active to help improve your heart health,” says senior study author Chiadi Ndumele, M.D., Ph.D., an assistant professor in the Department of Medicine at the Johns Hopkins University School of Medicine whose research focuses on strategies to predict and prevent heart failure.

While the study didn’t determine a direct causal link between exercise and lowered heart failure risk, Ndumele recommends adults get 150 minutes of moderate-intensity exercise per week (check with your doctor if you’ve been inactive or you have health concerns). Note, you’re in the moderate-intensity zone when you can have a conversation but are not able to sing.
PAVING THE WAY FOR BETTER PATIENT OUTCOMES. Dedicated researchers and clinicians across Johns Hopkins Medicine push the frontiers of medical science.
Automating Accuracy in Spinal Surgery

**BREAKTHROUGH:** Image-guided robotic screw placement improves precision in spinal stabilization surgery

If a person’s spine is unstable because of injury, degenerative disease or another cause, he or she may need spinal stabilization surgery to correct the problem. During this procedure, surgeons typically take multiple X-rays to pinpoint where to place screws to stabilize the spine. Seeking a better way than using numerous X-rays, Nicholas Theodore, M.D., M.S., director of the **JOHNS HOPKINS NEUROSURGICAL SPINE CENTER**, co-invented an image-guided robot that uses a computed tomography (CT) scan taken before or during surgery to precisely plan and insert the screws. With a push of a button, the robot guides the surgeon to place spinal screws with submillimeter accuracy. The Johns Hopkins Hospital is one of more than 50 health care systems nationwide using this innovation. We asked Theodore to explain some of the robot’s benefits.

**Q:** How do patients benefit from the robot-guided surgery?

Using this robotic device collapses surgical time. I performed a spinal surgery where it took the robot five minutes to help me place six screws through a minimally invasive incision. I couldn’t do that with the old X-ray method. If we’re doing surgery faster, recovery takes less time. Patients can go home in one or two days instead of four or five, and we’re seeing that as well. That has to do with reduced time under anesthesia and less tissue disruption, so healing can happen faster.

**Q:** What sparked this innovation?

The idea came from operating every day. One driving force was thinking about how to make this surgery safer for the surgical team. To place the screws, patients used to get 10 to 20 X-ray scans, which we consider a safe threshold of radiation exposure. Even though the surgical team wears lead protection, the radiation exposure becomes excessive over time, putting us at risk for cancer. I wondered if I could take the X-rays either before or during surgery without being in the room. Could I put those images into a system where I can navigate the spinal column without having to shoot additional X-rays? By taking a scan before or during surgery, the surgical team steps behind a radiation shield and suffers no exposure. The robot has essentially dropped our radiation exposure to zero.

**Q:** How does it complement existing robotic surgery?

With the robot, we plan the trajectory. Before we put the screw in, I draw a line on the screen and put a false screw on the bone. When I put the real screw in, I know exactly how long and how wide the screw should be based on the patient’s anatomy and his anatomy with my own eyes. It allows us to elevate and perfect this concept of minimally invasive surgery. We’re literally able to make tiny incisions to put a screw in with submillimeter accuracy.

**Q:** What does the future hold for this technology?

The platform for this technology—which is a marriage of a medical image, a patient and a robot—goes far beyond spinal surgery. Right now, we’re looking at targeting the brain, for example to do a tumor biopsy or put a brain electrode in someone with Parkinson’s disease. The reality is we can use this technology to target any place on the body. This combination of imaging, surgery and robotics will fundamentally change the way we do surgery.

The robot brings a new level of speed and accuracy to spinal surgery.

**THE ROBOTIC DEVICE COLLAPSES SURGICAL TIME SO RECOVERY TAKES LESS TIME AND PATIENTS CAN GO HOME FASTER.**

—Nicholas Theodore, M.D., M.S.
SEEKing Cancer

**BREAKTHROUGH:** Noninvasive tests detect cancer earlier

When it comes to treating cancer, finding it early increases survival. “Overall, early stage cancers respond better to therapies, and in many cases surgery alone can cure them,” says Nickolas Papadopoulos, Ph.D., a professor of oncology and pathology at the Johns Hopkins Sidney Kimmel Comprehensive Cancer Center.

Recently, a team of Johns Hopkins researchers, including Papadopoulos, made significant breakthroughs in developing three experimental noninvasive screening tests that detect 12 cancers before symptoms even begin. Several of these cancers have no other effective screening methods and thus often go undetected until symptoms develop at later, more aggressive and lethal stages.

Preliminary studies found that the tests are highly specific at detecting signs of cancer. “For these tests to be practical in the real world, they have to have very high specificity,” says Kenneth Kinzler, Ph.D., co-director of the Ludwig Center at the Sidney Kimmel Comprehensive Cancer Center, who is also one of the researchers. “That’s really important when you start screening the population, because you don’t want to subject them to unnecessary procedures.”

Johns Hopkins investigators acknowledge the tests need additional study before they’re available for clinical use, but they envision that the tests will enhance screening methods and guidelines.

**REPAIRING GROWING SKULLS**

**BREAKTHROUGH:** New Johns Hopkins center provides a multi-specialty approach to treating children with complex cranial conditions

Unlike the fully formed cranium of an adult, a child’s is still growing, as is the brain. These facts and other age-related considerations make surgery to correct cranial abnormalities or traumas such as a skull fracture particularly complex in pediatric patients.

At Johns Hopkins, tackling these challenging cases is the job of the multidisciplinary team at the recently launched Pediatric Cranial Reconstruction Center (PCRC). The center’s pediatric subspecialists (reconstructive surgeons and neurosurgeons) diagnose and treat cranial irregularities using the latest technology, including low-dose CT scanners that provide detailed images of bones, tissues and internal organs interfaced with 3D cameras to virtually plan surgical procedures.

A coordinated approach provides the most appropriate and safest care and reduces time to surgery from several months to a week on average, according to Richard Redett III, M.D., a reconstructive plastic surgeon and co-director of the PCRC, and pediatric neurosurgeon Eric Jackson, M.D.

To speed up treatment and get children back to their daily lives as quickly as possible, the PCRC team reviews patients’ records electronically. This strategic use of telemedicine allows patients to have initial screenings and surgical follow-ups from any location.

“We’ve focused on providing efficient care in a short period of time so people who come from overseas, come across state lines or even locally from Baltimore can get this done relatively quickly,” Redett says.

**PapSEEK**

**HOW DOES IT WORK?**

Physicians test cervical fluid collected during routine Pap tests for cancerous mutations in 18 associated genes and for aneuploidy, abnormal numbers of chromosomes in cells. There are no screening tests for either of these gynecological cancers, both of which are often first detected when they’re already metastasized and are more likely to be lethal.

**WHAT’S NEXT?**

Researchers are designing clinical trials for PapSEEK.

**SEEKING CANCER**

**DIAGNOSTIC EXCELLENCE**

The first-of-its-kind Armstrong Institute Center for Diagnostic Excellence is a multidisciplinary team of physicians, nurses, allied health professionals, scientists and staff from The Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center. The center’s mission is to enhance diagnostic accuracy, eliminate unnecessary diagnostic testing and prevent diagnostic errors. The center’s first major initiative has been to reduce stroke misdiagnosis at Johns Hopkins.

**LEARN MORE ONLINE:**

johns-hopkins-hospital.org/armstrong/institute/

**PATIENT SAFETY AND QUALITY DATA**

Johns Hopkins Medicine believes in empowering patients so they can make informed decisions on where to receive health care. The Patient Safety & Quality section of the Johns Hopkins Medicine website allows access to clear and concise patient safety and quality measures. This includes reporting on hospital infections, patient experience survey results, quality-of-care ratings, surgical volumes data and measures for pediatric care.

**LEARN MORE ONLINE:**

johns-hopkins-hospital.org/safety/

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**RECONSTRUCTING WITH THE CHILD’S OWN BONE, IT’S A PERMANENT SOLUTION THAT WILL GROW WITH THEM**

—Richard Redett III, M.D.
CancerSEEK
Detects breast, colon, esophageal, liver, lung, ovarian, pancreatic and stomach cancers

**HOW DOES IT WORK?**
Physicians analyze a patient’s blood to detect cancer by evaluating the levels of eight cancer proteins and testing for the presence of mutations in 16 cancer genes in circulating DNA in the blood. CancerSEEK has been tested on eight cancer types, but it can detect additional cancer types as well, Kafibler says.

**WHAT’S NEXT?**
“Assuming that CancerSEEK is successful during validation, it will be a simple test that will be part of a physical exam,” Papadopoulos says. “It will provide a way to screen for multiple cancers in healthy people. A successful test like this that becomes widely available can reduce cancer death significantly.”

UroSEEK
Detects bladder cancer and upper tract urothelial cancer

**HOW DOES IT WORK?**
Providers test urine samples for 11 gene mutations or an abnormal number of chromosomes indicating the presence of cancer-related DNA. These cancers aren’t easily detectable on a traditional urinalysis.

**WHAT’S NEXT?**
UroSEEK is aimed toward at-risk patients—those who may have blood in their urine, smokers and patients who’ve already been treated for bladder cancer. The test monitors for recurrence of the disease. UroSEEK is in the design stage for launching clinical trials.

Improving Recovery After Stroke

**BREAKTHROUGH:** Noninvasive stimulation recharges the brain

Stroke is the third-leading cause of disability worldwide and a major cause of dementia and depression, according to the World Health Organization. Recovery from a stroke can take months or years, depending on the patient’s loss of functions.

In researching and designing new ways for people to recover from stroke and other brain diseases, Pablo Celnik, M.D., director of the Center of Excellence in Stroke Treatment, Recovery and Rehabilitation at Johns Hopkins Medicine, and his research team created the Noninvasive Brain Stimulation (NIBS) Rehabilitation Program. The comprehensive, three-week program pairs high-intensity rehabilitation exercises with NIBS to facilitate recovery.

“The few centers that provide noninvasive brain stimulation are doing it outside the context of rehabilitation. So that makes us unique,” Celnik says. “Brain stimulation facilitates brain plasticity and brain recovery, but it needs to be done while the patient is doing exercises for language, cognition, movement or perception.”

NIBS has been shown to be a safe, painless way to improve post-stroke problems with speaking, swallowing, movement, cognition and other areas. And it has minimal side effects.

“We know that about two-thirds of folks who have strokes won’t recover fully. They go through rehab, they get better, but they never go back to normal,” Celnik says. “Through our program, we’re trying to amplify the effects of rehab to minimize the effects of stroke and other neurological conditions.”

**THROUGH OUR PROGRAM, WE’RE TRYING TO AMPLIFY THE EFFECTS OF REHAB TO MINIMIZE THE EFFECTS OF STROKE.**
—PABLO CELNIK, M.D.

HOW NIBS WORKS
NIBS helps rehabilitation in two ways, by stimulating the damaged area of the brain to restore lost function, and also by stimulating a different area of the brain to compensate for the loss of a function. In stroke recovery, clinicians use two methods to stimulate the brain. A patient may receive one or both:

- **TRANSCRANIAL MAGNETIC STIMULATION:** A magnetic pulse generated by a special coil is placed over the head to stimulate parts of the brain. What does it feel like? Patients often describe a pulling sensation on the skin under the coil or a tingling sensation on the head.

- **TRANSCRANIAL DIRECT-CURRENT STIMULATION:** A weak electrical current is applied via two small electrodes positioned on the head with a rubber headband. What does it feel like? Patients may experience flashes of light, feel an itching or tingling sensation under the electrodes or feel nothing at all.

**IDENTIFYING STROKE DAMAGE**
Stroke occurs when blood flow in an area of the brain is interrupted, causing damage to brain tissue (pictured in pink).
Worldwide, one of the most common causes of liver failure in children, and the need for liver transplantation, is biliary atresia, a rare disease that affects 1 in 8,000 to 1 in 18,000 newborns.

Bile plays a key role in digesting fats and eliminating waste products from the body. When a baby has biliary atresia, ducts from the liver to the gallbladder become scarred and blocked. This blockage means that children will have trouble gaining weight. It also causes bile to accumulate in the liver, leading to scarring, loss of liver tissue and function, and ultimately liver failure. Symptoms usually appear in the first weeks after birth and include jaundice, dark urine and discolored stools.

Left untreated, biliary atresia is fatal. If physicians catch biliary atresia early, an operation to reroute the ducts may be effective. In some cases, however, a liver transplant is necessary. Because liver damage often progresses rapidly, it’s vital that the patient be evaluated and listed quickly for a liver transplant.

The Johns Hopkins Children’s Center shortens the time between identifying the need for a liver transplant and intervention as much as possible through living-donor liver transplants. Donors are often parents or other relatives. Because the liver can regenerate lost tissue from what remains, transplant surgeons need only a portion of the donor’s liver.

The Johns Hopkins surgical transplant team led by Andrew Cameron, M.D., Ph.D., chief of the Division of Transplantation and surgical director of liver transplantation, has performed dozens of pediatric living-donor liver transplants. When necessary, the comprehensive transplant center at Johns Hopkins can complete the evaluation of a donor in a day.

“Sometimes these children deteriorate very, very quickly,” says gastroenterologist Douglas Mogul, M.D., M.P.H., medical director of pediatric liver transplantation and an assistant professor of pediatrics at the Johns Hopkins University School of Medicine, who researches barriers to living donations. “A living donor allows us to evaluate the child and donor and execute a transplant as quickly as possible, so the child can live a long, normal, healthy life.”

LEARN MORE ONLINE: hopkinsmedicine.org/transplant/liverlead
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2 | Share your medical story.
3 | Get connected with the right experts to treat your specific condition.

DEDICATED TO YOU

Since he joined Johns Hopkins Medicine International as an international care coordinator four years ago, MOHAMMED ALTAEE has dispensed wisdom and comfort to visiting patients and their families, including the Aldhanhani family whom you’ll meet on the next page. Altaee, who was born in Baghdad, primarily works with Middle Eastern patients. His fluency in Arabic, familiarity with the region’s culture and his knowledge of Johns Hopkins Medicine’s services, make him a reliable and stable presence for his international patients. Altaee is one of many multilingual care experts at Johns Hopkins Medicine International, all of whom provide dedicated assistance to their patients. See page 13 for an interview with Altaee.

MOHAMMED WAS DEDICATED TO KHALIFA AND MY FAMILY DURING THE LONG TREATMENT IN THE U.S. HE PROVIDED US WITH EVERYTHING WE NEEDED.
—Khalifa’s father, Ali Aldhanhani
A FATHER’S DETERMINED SEARCH FOR THE BEST CARE FOR HIS SON LEADS TO JOHNS HOPKINS

Born with a serious blood disorder known as beta thalassemia, Khalifa Aldhanhani of the United Arab Emirates (UAE) underwent his first bone marrow transplant in the United Kingdom at age 7. Four years later he developed complications. His father, Ali Aldhanhani, wishing to find a new doctor, searched the internet and read about pediatric oncologist Kenneth R. Cooke, M.D., at the Johns Hopkins Kimmel Cancer Center.

A family friend in the UAE who'd been treated at Hopkins put Aldhanhani in touch with International Care Coordinator Mohammad Altaee. Thankfully, Aldhanhani says, the UAE government is dedicated to providing its citizens the medical care they need, even if that care is abroad. Aldhanhani sent Khalifa’s records. “Within a short period of time, Dr. Cooke agreed to meet with Khalifa,” says Aldhanhani. As soon as they could, the family traveled to Baltimore. “After that, everything went fine, thanks to God.”

Cooke first determined what the trouble was with Khalifa’s initial transplant. “Khalifa had developed therapy-related myelodysplastic syndrome, which is life-threatening and required a second transplant with an alternative donor,” says Cooke. The second procedure was a success, and Khalifa, now 12, is thriving.

During Khalifa’s stay at The Johns Hopkins Hospital, everyone respected the Aldhanhanis’ Islamic religion and culture. “When the staff saw me praying, they wouldn’t interrupt. My wife stayed in Khalifa’s room during his hospitalization, so the staff put a ‘Knock First’ sign on the door,” Aldhanhani says. “Honestly, I thank everyone at Hopkins with all my heart—the doctor, the nurses and all the staff, they all did their best.”

OUR NETWORK: FAST FACTS

Johns Hopkins’ leading-edge physicians meet your medical needs while our team takes care of you and your family.

- Johns Hopkins Medicine has 6 academic and community hospitals, 4 suburban health care and surgery centers, and 40 primary and specialty care outpatient sites in the greater Baltimore–Washington, D.C., area.
- Comprehensive pediatric services at Johns Hopkins All Children’s Hospital in St. Petersburg, Florida.
- The Johns Hopkins Medicine International Patient Services team is made up of members fluent in 30 languages, who hail from 30 countries. Patients traveling from countries all around the world have been treated at Johns Hopkins.

EXPERT MEDICAL SECOND OPINION: Get the details you need to make an informed decision.

Our team of experts also offers remote consultations for newly diagnosed patients seeking a second opinion about their treatment options, so you can make the best decision for your health. For more information, visit hopkinsmedicine.org/secondopinionlead19.
GET TO KNOW INTERNATIONAL CARE COORDINATOR MOHAMMED ALTAEE

Q: Why are your words important to your patients? Because I am the person connecting them to the physician, the hospital, the pharmacy. Whether someone is receiving good news or bad news, I have to make sure the patient understands every detail. And I do it with deep empathy and the right expression.

Q: What’s your favorite part of your job? It’s the relationships I have with the patients and the happiness I feel at the end of treatment when families are happy with the outcomes. Also referrals—when current patients refer their friends and relatives to Johns Hopkins—that motivates me to go the extra mile.

Q: How do you make patients feel comfortable when there are cultural differences? Let’s say that a woman from Saudi Arabia prefers a female nurse. We set that expectation with the clinic in advance. I serve as a cultural broker for international patients. We support anything required for their culture or religion as much as possible during their stay.

Q: Do you become close with patients and their relatives? They’ve told me, “You are a part of our family. You are like a friend who we gained forever.” People who left two years ago are still communicating with me. It’s a relationship that’s really going to last a lifetime.

IN YOUR LANGUAGE
For more information in other languages, please visit: hopkinsmedicine.org/arabic, /chinese, /espanol or /portugues.

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WE MAKE TRAVEL ABROAD FOR MEDICAL CARE AS COMFORTABLE AS POSSIBLE

Our compassionate team is dedicated to providing you and your family with a personalized, stress-free experience. We’re with you through every step of your visit to Johns Hopkins, so you can focus on your health.

1 BEFORE YOUR VISIT
• From your first inquiry, you’ll be paired with a caring, knowledgeable international medical concierge who will facilitate communication in your preferred language.
• A medical expert may review your medical records.
• Your concierge will provide cost estimates, verify coverage, help facilitate payment, schedule specialist appointments, assist with hotel and ground transportation, and provide a detailed itinerary.

2 DURING YOUR VISIT
• A culturally knowledgeable care coordinator will escort you to medical appointments and make Johns Hopkins feel as close to home as possible.
• Our patient experience team will help you know what to expect and how to access a range of services, including international newspapers, internet access, specialty grocery stores, restaurants, shops, banks and more.
• Our care team is prepared to handle any urgent medical needs.

3 AFTER YOUR VISIT
• Your care coordinator will ensure you have all necessary medical records and prescriptions, as well as any follow-up instructions from doctors.
• You’ll receive a consolidated final bill, with a financial specialist available to support you and answer any questions.
• We will provide a summary of your care prior to your departure, and we remain available as you make your transition back home.

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REALIZING THE MISSION. Johns Hopkins Medicine International provides innovative collaborations and personalized care for diverse populations.

FOSTERING COLLABORATION
Johns Hopkins Medicine is home to some of the greatest innovators in the medical field. Johns Hopkins Medicine International builds bridges between our experts and affiliates.

SOUTH AFRICA
As part of a three-year education exchange, Johns Hopkins nurses are working with their counterparts at Nelson Mandela Children’s Hospital (NMCH)—a state-of-the-art, 200-bed hospital in Johannesburg that is the first children’s hospital in the region (above).

Johns Hopkins nursing consultant Wilma Berends and registered nurse educator Kristina Hoerl visited NMCH with other Baltimore nurses to offer guidance and share best practices. In turn, nursing director Jayson Gopiechand and other NMCH leaders came to Baltimore for lectures, simulations and observations.

More Advances
Johns Hopkins Medicine International’s collaborative work is taking the Johns Hopkins Medicine mission beyond our borders to help raise the standard of health care around the world. Here are other examples of how Johns Hopkins Medicine International is fostering collaboration, developing leaders, elevating care, championing patients and fueling discovery.

LEARN MORE ONLINE: hopkinsmedicine.org/international

DEVELOPING LEADERS
Our educational initiatives build a human foundation for stronger health care organizations. Leadership training provides executives and nurses better context for their decision-making.

MEXICO
One hundred twenty-five years after ushering in a new era of medical education by incorporating bedside teaching, laboratory research and medical residencies as part of instruction, Johns Hopkins is sharing this foundational philosophy of training and education with our global affiliates such as:

UNITED ARAB EMIRATES
Johns Hopkins’ Sidney Kimmel Comprehensive Cancer Center is working with Tawam Hospital to establish a center of excellence for cancer care in a country where cancer accounts for almost 1 in 5 deaths.

U.S. VIRGIN ISLANDS
After two Category 5 hurricanes slammed the islands in less than two weeks in September 2017, three waves of Johns Hopkins response teams traveled to St. John to provide hands-on medical care and bring much-needed supplies and medicines.

LEBANON
Clemenceau Medical Center hosted physicians from around the region and Johns Hopkins faculty to learn together, discuss their areas of expertise and earn continuing medical education credits.

PERU
The Institute for Johns Hopkins Nursing conducted leadership training with 44 current and aspiring nurse leaders from across the Pacific Salud health care network.

Medical students from Instituto Tecnológico y de Estudios Superiores de Monterrey Escuela de Medicina y Ciencias de la Salud.
as the Instituto Tecnológico y de Estudios Superiores de Monterrey Escuela de Medicina y Ciencias de la Salud (TEC) in Mexico (below).

Twice a year, four top medical students from TEC come to Johns Hopkins to complete nine-week medical rotations with educators, scientists and physicians who are the foremost experts in their fields. Students do clinical and research rotations in head and neck surgery, oncology, neurosurgery and cardiac surgery.

1 ELEVATING CARE

Johns Hopkins Medicine aims to provide the best medical care—and to elevate that care every day. We are always striving to discover and apply new ideas, techniques and therapies to improve human health.

PANAMA AND BRAZIL

After collaborating with Johns Hopkins emergency medicine experts, in 2017 Pacifica Salud Hospital Punta Pacifica opened the first pediatric emergency department in a private health care facility in Panama. Nurses and physicians from Johns Hopkins consulted on designing the facility, selecting equipment and standardizing care. They recommended ways to optimize patient flow and efficiency and helped ensure the new unit had the right equipment and supplies.

In Brazil, Hospital Moinhos de Vento (HMV) is working closely with Johns Hopkins to enhance its adult emergency department (ED). Expanding beyond operations, HMV embarked on a joint research project with Johns Hopkins to implement an electronic patient triage tool that analyzes patient data from ED visits.

2 CHAMPIONING PATIENTS

The leading-edge medical expertise of Johns Hopkins Medicine draws patients from all over the world. We strive to take care of everything patients need, making them feel at home even when they’re thousands of miles away.

CULTURAL EXPERTISE

As more and more patients travel from China to the United States seeking the latest treatments, Johns Hopkins has taken several steps to improve their experience. We revamped our Simplified Chinese microsite, where patients can read about the latest clinical developments in their native language. We also expanded our team of Chinese-speaking international care coordinators, who accompany our patients every step of the way. “Our culture is more than language,” says care coordinator Virginia Fung. “Because I understand the culture, I know how to best represent a Chinese patient. I get the nuances of where they are coming from, because that’s where I come from, too.”

3 FUELING DISCOVERY

The collaborations that Johns Hopkins researchers establish with our international affiliates bring important questions—and their life-saving answers—to the world.

LATIN AMERICA

Johns Hopkins Medicine International colleagues have published research on how academic medical centers can forge transformative partnerships with health organizations around the world.

In Brazil, Johns Hopkins urologists and affiliates Hospital Moinhos de Vento in Brazil and Pacifica Salud Hospital Punta Pacifica in Panama conducted joint research to eliminate a patient safety issue that causes serious complications, and even death. They published their study, “Preventing the Forgotten Ureteral Stent by Using a Mobile Point-of-Care Application,” in the Journal of Endourology in 2017.

In addition, after five years of collaborative work, researchers from Johns Hopkins and Clínica las Condes (above) published their findings on the genetic origins of obesity in Chile in the peer-reviewed journal Metabolic Syndrome and Related Disorders in 2017.

LEARN MORE ONLINE: Watch a video of the Eves’ story and their vow renewal ceremony at hopkinsmedicine.org/storylead19.
THE PROMISE OF MEDICINE

AT JOHNS HOPKINS MEDICINE, FOUR PRINCIPLES INSPIRE EVERYTHING WE DO.

1. INNOVATION
   Johns Hopkins earned its reputation by radically transforming medical education and the practice of medicine.

2. COLLABORATION
   The professionals who call Johns Hopkins home collaborate not only with each other, but also with a vast network of leading health care resources to give patients a better chance for successful treatment.

3. HUMAN CONNECTION
   As medicine becomes more complex and treatment possibilities more abundant, we’re committed to the human-to-human approach, treating patients with respect and dignity.

4. HOPE
   The work our medical experts do today pushes boundaries and lays the groundwork for what might just eradicate particular conditions in the future.

TO LEARN MORE, VISIT HOPKINSMEDICINE.ORG/INTERNATIONAL.