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contents



NORTH AMERICAN HOSPITALS

- 2 Best of both worlds
- 6 Children's Hospital of Pittsburgh
- 8 Houston Methodist Global Health Care Services
- 10 Cincinnati Children's Hospital
- 12 Baylor St. Lukes Medical Center
- 14 Nemours/Alfred I. duPont Hospital for Children
- 16 Best Hospitals Ranking
- 18 Mayo Clinic
- 20 Lurie Cancer Center of Northwestern University
- 22 Lurie Children's Hospital of Chicago
- 24 Partners Healthcare International
- 26 The Rehabilitation Institute of Chicago
- 28 Boston Children's Hospital
- 29 Indiana University Health
- 30 Children's Mercy Kansas City
- 32 Johns Hopkins Medicine





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Middle East Health is published by Hurst Publishing FZE, Creative City Fujairah, Licence Number: 3910/2013 FBCC.

Middle East Health website www.MiddleEastHealthMag.com

Middle East Health is printed by Atlas Printing Press. www.atlasgroupme.com





Best of both worlds: US hospitals open doors to Middle Eastern patients

The leading hospitals in the United States have for many years been the premier option for Arab patients seeking specialized treatments generally not available in the Middle East. However, as Arab patients continue to travel to the US, so are some US hospitals traveling to the Middle East and establishing long-term partnerships to build and manage hospitals in the region to provide certain specialized treatments locally. **Renée–Marie Stephano, JD**, looks at Arab-US medical tourism.



By Renée-Marie Stephano, JD

Doctors prescribed medicine to stop the early morning vomiting that had become both routine and worrisome. That didn't work. Then, Khalid lost mobility on the right side of his body, complained about headaches and was more fatigued than a healthy four-year-old boy should be.

Worry moved to fear after a CT scan confirmed what his parents had not even imagined. Khalid had a life-threatening tumor on the back of his head. Doctors in the United Arab Emirates told Mohammad Al Ansari and his wife, Hend, that their son required a risky surgery that might leave him unable to walk, see or talk. When the parents learned that the local surgeon in Dubai was not experienced in these procedures, the couple did what any parent would do: they sought the best care available for their son – even if that meant boarding an air ambulance, which flew from their home in Dubai to the United States, where doctors and staff at Dana-Farber/Boston Children's Cancer and Blood Disorders Center prepped to remove Khalid's brain tumor.

Not all medical excursions from the Middle East to destinations in the West are as dire, but, healthcare providers in Boston and those in other large cities



Middle Eastern patients tend to spend more money than other foreigners during their stays. This has prompted healthcare providers in the US to invest in ways to make living in the USA – if only temporarily – much more comfortable for these patients and their accompanying entourages.

in the United States have opened their doors open to patients from the Arab world who seek a range of treatments – from cosmetic surgery to heart transplants.

They come in all shapes and sizes. From young Khalid to one of the world's richest men: Sheikh Zayed bin Sultan Al Nahyan, president of the United Arab Emirates and ruler of Abu Dhabi, who brought with him a large royal entourage when he visited The Cleveland Clinic for a liver transplant more than a decade ago. Not all medical travelers are royalty or wealthy, either – and their destinations vary as do their reasons for medical care.

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Safe passage

At Boston Children's, the hospital's International Health Services staff worked closely with the medical team in Dubai to coordinate Khalid's treatment – from ensuring safe travel to small gestures that address the family's cultural sensitivities. Thanks, in part, to a surge in patients from the Middle East, Boston Children's saw annual profits jump by 28%; this at a time when revenue from American patients has stagnated.

More hospitals in the United States are also responding in kind by pitching services to Arab clientele from Kuwait, the United Arab Emirates, Qatar and Saudi Arabia where unhealthy lifestyles are catching up with aging populations. Although the potential yield from these marketing campaigns may be great, the data and resources that influence Middle Eastern patients to travel abroad is relatively scant.

The Medical Tourism Association has taken steps to fill in some of these gaps. Through an alliance with the Saudi American Health Institute, the nonprofit trade organization launched the Arab Health and Wellness Forum – at the World Medical Tourism & Global Healthcare Congress, in September this year, in Orlando, Florida – where providers and the buyers who purchase their services addressed issues of quality and outcomes, destination and pricing, and related factors to gauge the prospects for international medical travel.

Arab culture

Detroit Medical Center attracts patients from more than 100 countries. A website specifically tailored to Middle Easterners offers services in Arabic. Once admitted, personalized attention for these patients includes arrangements for dietary and cultural requirements, such as Halal meals and proper dress for women during exams; interpretation and resource material in Arabic; and information detailing both on-campus and off-site areas for prayer and religious services.

Other prestigious American hospitals are picking up on these offerings. At Johns Hopkins in Maryland, patients are often streamlined into the hospital's luxury wing, which boasts amenities, such as personal chefs and fashionable robes to replace the ordinary medical gowns.

Keeping Americans at home

And while medical travelers continue to

go to the US for treatment, several US states are developing strategies to prevent the flow of Americans seeking treatments overseas. An estimated US\$15 billion is at stake here. To keep that money in the US, some states are passing legislation, revitalizing their cities and spending millions in an effort to reverse the trend of Americans leaving the US for what are primarily more affordable elective treatments abroad.

In Minnesota, for example, the state legislature approved \$585 million in funding to upgrade infrastructure in Rochester and enhance the appeal of the Mayo Clinic in that city. Mayo – an international Center of Excellence – has already put \$5 million toward expansion to solidify its footing as a 'global medical destination'.

Abdullah Al Obaid traveled from his home in Kuwait to Rochester, where he spent nearly five months with his wife at the Kahler Grand Hotel, so that neurologists at the nearby Mayo Clinic could monitor his multiple sclerosis treatments.

Competition

The competition among US hospitals to attract Arab patients can be fierce, but not all of the battles are being waged on US soil. This competition is now also being played out in foreign lands. Some US hospitals, seeing the opportunity to reinforce existing relationships or establish new partnerships, are extending their services abroad.

Johns Hopkins, Houston Methodist, Cleveland Clinic and others have formed partnerships in the Middle East to provide a range of medical services at the regional level.

Although Cleveland Clinic has treated some 3,200 international patients annually in the United States – about 35% from the Middle East – the hospital system has expanded its services to the United Arab Emirates. The opening of Cleveland Clinic Abu Dhabi recently marked the first time a major US academic medical center had assumed management responsibility of both a hospital and delivery of care in the Middle East.

Another intercontinental partnership has been set up between Dubai Healthcare City and Houston Methodist Global Health Care Services. They will provide education and training at the Mohammed Bin Rashid Academic Medical Center



in Dubai Healthcare City. The Methodist Hospital in Houston, meanwhile, has ongoing agreements that provide for continuum care in Saudi Arabia.

In yet another venture, Johns Hopkins, the international healthcare giant just a short drive from Washington, DC, is providing similar services for Saudi Aramco, the global petroleum company owned by the Saudi Arabian government. Global collaborations like these, while creating new revenue streams and strengthening brand recognition, fundamentally and more im-

The Author

Renée-Marie Stephano, JD, is president of the Medical Tourism Association, the first membership-based international nonprofit trade organization and think-tank for the medical tourism and healthcare industry. The MTA provides strategic development programs for destinations seeking to create portantly also help improve the care of patients in the region.

Within two days of his seven-hour procedure, Khalid had returned to the antics of a healthy four-year-old – playing video games and Skyping family back home in Dubai – while doctors at Boston Children's coordinated aftercare with their counterparts in the United Arab Emirates. The tumor was benign; just what the boy's healthcare providers in the UAE and Mohammad and Hend Al Ansari, the parents of Khalid, had hoped for.

sustainable and attractive programs for foreign direct investment. The MTA provides advisory services to investors interested in the industry and matches these financiers with medical tourismrelated projects.

www.MedicalTourismAssociation.com

Together, we are **eradicating** more disease than in any other era in medical history.

I am living proof.

Dr. O.H. "Bud" Frazier, MD Professor of Surgery, Baylor College of Medicine® Chief, Transplant Services, Baylor St. Luke's Medical Center Director, Surgical Research, Texas Heart® Institute

In 1969, while still a medical student, Dr. Frazier found himself massaging the heart of a young man, keeping him alive, albeit briefly. This experience fueled his passion for discovering new ways to save more lives through cardiovascular innovation. Since then, he has performed more heart transplants and implanted more mechanical heart pumps than any other surgeon in the world.

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Advancing pediatric medicine with innovation and family-centered care

Throughout its 125-year history, Children's Hospital of Pittsburgh of UPMC has helped define excellence in pediatric medical care and research. Children's Hospital ranks eighth on "U.S. News & World Report's 2015-16" Honor Roll of America's Best Children's Hospitals.

Located in Pittsburgh, Pennsylvania, Children's opened its new, innovative campus in 2009. The 296 bed hospital was designed with children and families in mind with private patient rooms and many homelike amenities. Additionally, it's one of the most technologically advanced facilities in the U.S. for pediatric medicine. Clinical services that set Children's apart include innovations in the neurosciences, cardiac care, transplantation, rare disease therapy, and ophthalmology.

Brain Care Institute

At the Brain Care Institute (BCI), innovative medical and surgical treatment options are available to help patients afflicted with neurological disorders. The BCI brings together a number of pediatric specialties, including: neurology, neurosurgery, neuro-critical care, and neuro-oncology – a unique combination of international specialists all dedicated to the care of children with injuries or conditions related to the brain and spinal cord.

Heart Institute

The Heart Institute is one of the most active and innovative centers for the care of children who are born with or who acquire heart problems.

Achievements include:

• The lowest overall four-year surgical mortality rate among all medium- and high-volume pediatric cardiovascular surgery programs with a rate of 1.1%, according to the latest data compiled by the Society of Thoracic Surgeons (2008-2012).

• One of the most experienced centers in the use of the Ventricular Assist Device (VAD), a mechanical heart pump that offers lifesaving support to keep patients alive until heart transplantation or recovery occurs



First in pediatric transplantation

Children's Hospital established the world's first and largest pediatric transplantation center in 1981 under renowned transplant pioneer Thomas E. Starzl, MD, PhD. The Hillman Center for Pediatric Transplantation has:

• Performed more transplants in children than any other facility

• Patient survival rates that are among the world's best

• Transplant specialties include liver, intestine, kidney, heart, lung, and blood and bone marrow

• Recognized as a leader in transplantrelated research

Rare disease therapy

The Center for Rare Disease Therapy consists of international experts who are focused on treating children with rare diseases, defined by leading standards of care, pioneering protocols, and individualized services.

World-class ophthalmology care

Children's Division of Pediatric Ophthalmology, Strabismus, and Adult Motility is led by one of the world's foremost pediatric eye specialists, Ken K. Nischal, MD, FRCOphth. As part of the UPMC Eye Center, it combines best practices and interdisciplinary collaboration to deliver exceptional care for visually impaired patients – from infants to adults.

Groundbreaking research

Children's Hospital's has a rich heritage in pediatric research and today is recognized as one of the fastest growing National Institutes of Health (NIH)-funded pediatric research programs in the U.S.

Experts in telemedicine

Children's Hospital is a leading center for the use of telemedicine services to bring pediatric specialists to hospitals worldwide through state-of-the-art technology. Children's offers remote physician-to physician consultation of critical care units to hospitals around the world in need of pediatric intensivists. Children's provides telemedicine consultative services with pediatric cardiac critical care units in various cities in Colombia and post-operative management of pediatric liver transplant patients in Palermo, Italy.

International services

Children's International Services team is available to assist physicians, parents, health ministries, and embassies around the world who are seeking leading-edge clinical services, consultation, education and training, and more. International liaisons are fluent in multiple languages including Arabic, to ensure proficient communication. Its Passport Care program helps patients and families feel at home until they return home, providing a wide range of concierge services such as assistance with housing, transportation, administration, translation, financial counselling and religious and cultural matters.

• To learn more about Children's Hospital of Pittsburgh of UPMC, visit: *www.chp.edu* or contact our International Services team at: +1-412-692-3000 or by email: *international@chp.edu*

More than 95 countries trust in our world-class care.

We care for children from around the world and have a reputation built on our groundbreaking research and deep understanding of the diagnosis and treatment of complex and rare diseases. It's no wonder *U.S. News & World Report* recently ranked us:



#3 on the Best Children's Hospitals Honor Roll for the fifth year in a row

#1 for pulmonary care

To refer a patient or learn more, please call us in the United States at 001-513-636-3100, email us at international@cchmc.org or visit cincinnatichildrens.org/international.

Cincinnati Children's

Hospital Medical Center

Sultan, a colorectal and urology patient from United Arab Emirates



Leading the field in organ transplantation

Backed by the world-renowned Houston Methodist Hospital, Houston Methodist Global Health Care Services serves as a single point of contact for our international partners looking to create vibrant health care organizations, and for our patients seeking the highest quality clinical care. Houston Methodist Global was established in November 2005 in the United States, and the regional office for Europe, Middle East and Africa opened three years later in Dubai.

Today Houston Methodist Hospital is privileged to treat thousands of patients for specialized medical care from more than 90 countries around the world, including every country in the Middle East. But our aim as an institution is higher than simply treating today's international patients. We hope to set a global standard of excellence in international patient care, professional education and training, clinical collaboration, and advisory services. We work with individuals and institutions to build international health care organizations around the world. Our clinicians also have the opportunity to collaborate with institutions in the Texas Medical Center, the largest medical center in the world, which can lead to medical breakthroughs that improve patient care right here in Houston.

Transplants

For more than 50 years Houston Methodist has been leading the world in the specialty area of organ transplantation, beginning with our first kidney transplant performed in 1963 by the internationally renowned Michael E. DeBakey. Today, under the direction of A. Osama Gaber, the Houston Methodist J.C. Walter Jr. Transplant Center is the largest and most comprehensive transplant center in the region and one of the largest heart-lung transplant programs in the world. Houston Methodist performs several hundred transplants each year, and has performed more than 5,000 organ transplants in total.

Our approach is built around the idea that transplant is much more than just surgery, and we are dedicated to providing excellent clinical care, resources and support to help patients and their families face organ and tissue transplant with confidence – through the entire process.



Skull and scalp transplant

Last month Houston Methodist announced the world's first skull and scalp transplant, along with simultaneous kidney and pancreas transplants, performed at our hospital in May. Jim Boysen, a 55-year-old software engineer from Texas, is the first patient to receive the simultaneous craniofacial tissue transplant together with solid organ transplants.

The 15-hour surgery, which was conceptualized nearly four years ago, was performed at Houston Methodist Hospital by a team led by Houston Methodist's A. Osama Gaber, M.D., and fellow Texas Medical Center institution MD Anderson's Jesse C. Selber, M.D., on Friday, 22 May. He was discharged from Houston Methodist in June and remained at Nora's Home, a unique resource available for Houston area transplant patients who need accommodations both pre- and post-transplant, for follow-up care.

More than 50 health care professionals performed, assisted with or supported the surgery, including specialized reconstructive plastic surgeons from MD Anderson and Houston Methodist Hospital and a team of transplant surgeons, a neurosurgeon and an anesthesiologist, nurses and others from Houston Methodist. LifeGift, a Texas-based organ procurement organization, played an integral role in the planning and preparation as well, never before facilitating the procurement of a scalp and skull for transplant. In 2006, Boysen had been diagnosed with leiomyosarcoma, a rare cancer of the smooth muscle, on his scalp. Successfully treated with chemotherapy and radiation, he was left with a large, deep wound on his head that included the scalp and the full thickness of his skull down to his brain.

In addition to the wound, which would require a major reconstructive undertaking, Boysen's kidney and pancreas, which were first transplanted in 1992, were failing. Diagnosed with diabetes at age 5, Boysen's declining condition over the years prompted the original double-organ transplant.

When Selber and Boysen first met, the scalp and skull wound were preventing doctors from performing the second solid-organ transplant. Likewise, his critical kidney and pancreas functions, together with his immunosuppression medications, were complicating scalp reconstruction.

But while his wound, medication and transplanted organ failure created a clinical Catch-22, they would also be part of the solution that led to the triple transplant.

Houston Methodist has been leading medicine for almost 100 years, and organ transplant specifically for more than 50. This incredible achievement presents an exciting breakthrough in this highly specialized field, and is demonstrative of the incredible power of institutional collaboration. You can seek the help of one doctor.

Or you can turn to Mayo Clinic.

At Mayo Clinic, a team of experts works together for you. No wonder Mayo Clinic's collective knowledge and innovative treatments have been a shining light to millions around the world. Visit mayoclinic.org or mayoclinic.org/arabic to learn more.



Case Study

Gynecology collaboration for complex patients

This case study describes work at Cincinnati Children's Hospital Medical Center demonstrating the interdisciplinary, collaborative model of care provided for all pediatric patients, especially those with complex congenital anomalies.

Clinical history

A 3-year old girl was born with multiple congenital anomalies including a complex anorectal malformation (ARM) called a cloaca, reproductive system concerns, a repaired tracheoesophageal fistula, multicystic kidney disease of the right kidney, and sickle cell trait. She also had multiple cardiac concerns including double outlet right ventricle with malposed great vessels, bilateral superior vena cava (SVC) with left SVC to coronary sinus pulmonary and subpulmonary stenosis, hypoplastic mitral valve, right aortic arch and a previous Blalock-Taussig (BT) shunt. Prior to coming to Cincinnati, she underwent cardiac catheterization for worsening cyanosis, with stent replacement.

The family elected to travel to Cincinnati Children's in Cincinnati, Ohio for care of their daughter's multiple anomalies, including the cloacal anomaly, reproductive concerns and cardiac issues.

Our approach

Our interdisciplinary teams reviewed her case prior to her arrival. Detailed evaluation of her case allowed us to plan for proper evaluation to ensure we developed the appropriate plan of care before the child arrived.

Due to her complex cardiac history, Cincinnati Children's Heart Institute team also reviewed her case. They requested additional evaluation with a cardiologist, an EKG, echo, and possibly MRI. Before evaluation, it was unclear if the patient needed cardiac surgery prior to surgical reconstruction of her other anomalies. Eventually, it was determined she definitely needed further surgical repair of her cardiac defect since the recent stenting would only provide temporary improvement.

The pelvic reconstructive surgery team and pediatric specialists from our colorectal, urology and gynecology teams reviewed her case and made recommendations for additional testing and a combined exam to better understand her anatomy and make the best comprehensive surgical plan.

Diagnosis of anomalies

A combined surgical evaluation was performed confirming a complex ARM, a cloaca with a single perineal opening. A definite vagina could not be visualized, confirming the need for expert pediatric and gynecological surgeons in the operating room for her definitive reconstructive procedure. The reproductive anatomy could not be definitely identified from a pelvic MRI, which was also part of her evaluation; however, it was suspected she did not have a well formed uterus or vagina and would need vaginal reconstruction in combination with her cloacal repair. The urology team would need to be available during the procedure to protect the solitary functioning kidney during the complex reconstruction.

The family was counseled regarding preoperative findings, future inability of the child to carry her own pregnancy, and the need for neovaginal reconstruction. The urology and colorectal teams also reviewed the future for bladder/bowel control. Since reproductive structures are stimulated at the time of puberty, it would be critical to delineate her anatomy during surgery to protect the patient from pain and discomfort at the time of future menstruation, in case she had a poorly developed uterus. A review about future childbearing possibilities was important to help her family understand the possibility for surgery now with her combined procedure and her future options.

Surgical course

Due to the severity of the cardiac concerns, we proceeded with cardiac surgery prior to cloacal reconstruction. Initially managed as a single ventricle palliation, after assessment here, we determined we could make a two-ventricle repair so she would not be cyanotic. This would minimize her planned re-operations in the future and allow her to better tolerate her hometown climate. David Morales, MD, director of pediatric



Pelvic MRI demonstrated normal ovaries, with the left one seen on this image; however, the image did not show a normally developed uterus.

cardiothoracic surgery, performed her double outlet right ventricle (DORV) repair, transannular patch (RVOT reconstruction with CorMatrix), right ventricular overhaul, repair of tricuspid valve, repair of sinus venosus ASD and secundum ASD, repair of cardiac TAPVR, VSD enlargement, and division of left BTS. She tolerated conversion to a two-ventricle repair well.

Eight months after cardiac surgery, she underwent a combined procedure which allowed a follow up to her tracheoesophageal fistula repair with Michael Rutter, MD, plus a posteriorsagittalanorectovaginourethroplasty for cloacal malformation with laparotomy, colostomy/mucous fistula takedown, bilateral removal of poorly formed uterine remnants, vaginal replacement with descending colon, and colostomy recreation performed by Andrea Bischoff, MD and Lesley Breech, MD. Brian Vander Brink, MD evaluated kidney and bladder anatomy.

The child was recently discharged from the hospital and is doing well. She will return for colostomy closure and assessment of vaginal healing after two months.

Summary

This case demonstrates the benefit of interdisciplinary management all patients receive at Cincinnati Children's. We collaborate to address current issues of concern, like cardiac reconstruction, and future concerns, like reproductive anomalies that potentially cause pain and need for future surgery. We understand the importance of future reproduction and childbearing for patients. By addressing these concerns, we enable families to ask questions, understand reproductive potential, and form appropriate expectations and goals for a healthy future.

The patient described had a unique set of conditions that were addressed efficiently at one center with one comprehensive, interdisciplinary management plan including cardiology, cardiothoracic surgery, pediatric surgery, urology and gynecology. Thorough pre-surgical evaluation and treatment planning helps minimize anesthesia, improve family understanding and expectations, and may result in better outcomes.

A promise to children and families around the world.





Children deserve the best care possible no matter where they live. That's why doctors and families around the world turn to Nemours. As an internationally recognized children's health organization — and renowned for our pediatric orthopedic expertise — we provide highly specialized care with respect for each family's unique health, cultural and financial needs. Our Nemours/Alfred I. duPont Hospital for Children is consistently rated among the best children's hospitals in the nation by *U.S. News & World Report*. And while this level of pediatric care is not always available around the globe, it is the Nemours promise to help every child, everywhere, have a healthier future.

Nemours International Medicine Program: Expedited appointments with a specialist are available. Email InternationalMedicine@Nemours.org or call +1 (302) 651-4993 (Monday–Friday, 8 a.m. to 5 p.m. EST). Nemours.org



Children's Health System Your child. Our promise.

CHI St. Luke's Health: A new era in healthcare

The world-renowned Texas Medical Center (TMC) – the largest medical complex in the world with more than 7.2 million visits per year – is home to CHI St. Luke's Health–Baylor St. Luke's Medical Center (Baylor St. Luke's).

As part of a six-hospital health system, Baylor St. Luke's is a quaternary care facility in Houston that is dedicated to a mission of enhancing community health through high-quality patient care in caring for the whole person – body, mind, and spirit. Led by Wayne Keathley, President, Baylor St. Luke's has embarked on a new era in healthcare through significant alliances that position the hospital at the forefront of transforming the delivery of healthcare in Texas and the United States.

In the heart of the Texas Medical Center

Together, Texas Heart Institute, an internationally recognized leader in cardiovascular care and CHI St. Luke's Health–Baylor St. Luke's Medical Center (Baylor St. Luke's) form one of the largest heart centers in the world for research and treatment.

The strategic alliance with Baylor College of Medicine, one of the top medical schools in the United States,



adds a level of research capabilities and collaboration that paves the way for even more revolutionary discoveries – from regenerative medicine to the development of next-generation medical devices.

History of making history

Since 1962, Texas Heart Institute, founded by Denton A. Cooley, MD

in 1962, has been leading world-class physicians in performing research to better understand the diagnosis and treatment of cardiovascular disease. Now, CHI St. Luke's Health is continuing to make lifechanging breakthroughs to:

- eliminate heart disease,
- discover more methods of prevention, and

Baylor St. Luke's Medical Center Facts

- Ranked as one of America's "Best Hospitals" for Cardiology & Heart Surgery for 25 consecutive years by U.S. News & World Report.
- Member of one of the nation's largest health systems: Catholic Health Initiatives
- FOUR-time ANCC Magnet Designation for Nursing Excellence – highest honor bestowed to a hospital for nursing
- Cares for patients representing more than 70 countries around the globe
- Collaborative partnership with Baylor College of Medicine one of the top medical schools in the U.S. and its Dan L. Duncan Cancer Center is a NCI-

Designated Comprehensive Cancer Center – one of less than 50 in the US

- Home of Texas Heart Institute (THI) featuring world-renowned physicians and the birthplace of the world's first heart transplantation
- To date, Baylor St. Luke's has performed more than 250,000 cardiac catheterizations, 115,000 open-heart surgeries, and 1,200 heart transplants.
- Baylor St. Luke's and Texas Heart Institute have made some of the most important and groundbreaking medical discoveries in cardiovascular history, including the nation's first suc-

cessful heart transplant, the world's first artificial heart transplant, and unprecedented advancements in preventative care.

- Recipient of Get with The Guidelines Stroke Silver Plus Quality Achievement Award and the Target: Stroke Honor Roll Elite Achievement Award from the American Heart Association/ American Stroke Association in 2015 for its exceptional Comprehensive Stroke Program
- Accredited by the Intersocietal Accreditation Commission (IAC) in Nuclear Medicine, Nuclear Cardiology, and PET imaging.

• save more lives than in any other era in medical history.

Texas Heart Institute

- FIRST successful heart transplantation in the United States
- FIRST implantation in the world of an artificial heart in a human
- More than 100,000 open-heart procedures performed
- FIRST in the US to implant a pacemaker enclosed in a mesh envelope embedded with two antibiotic agents that provide site-specific antibiotic protection
- THI Surgeon, Dr. O.H. "Bud" Frazier has performed more heart transplants and left ventricular assist device implantations than any other surgeon in the world

Cancer care

The Dan L. Duncan Cancer Center at Baylor College of Medicine offer the best minds in cancer treatment backed by the renowned researchers of Baylor, improved outcomes through comprehensive, personalized care, and access to the latest clinical trials. We are at the forefront of personalized medicine, replacing traditional treatments with targeted therapies based on each individual's unique biology and the exact characteristics of their cancer.

The National Cancer Institute awarded the Dan L. Duncan Cancer Center at Baylor College of Medicine the prestigious designation of a NCI-Designated Comprehensive Cancer Center. The comprehensive status designation moves the Duncan Cancer Center into an elite class of 45 centers from around the country whose programs demonstrate significant depth and breadth in basic, clinical and translational research, research into cancers most affecting their communities, clinical care, outreach and education activities, as well as cancer epidemiology and prevention programs.

Experts in the Lester and Sue Smith Breast Center at Baylor College of Medicine specialize in the prevention, diagnosis and treatment of breast cancer and benign breast disease. We are one of only a few comprehensive breast care centers in the country focused exclusively on prevention, diagnosis, and treatment of breast disease and breast cancer.

First Lung Institute in Texas

Baylor College of Medicine, NCI-Desig-

nated Comprehensive Cancer Center, and Baylor St. Luke's Medical Center have developed the first comprehensive, multi-specialty Lung Institute in Texas, with a team of specialists led by world–renowned lung disease expert and surgeon David Sugarbaker, MD. From asthma to lung cancer, the Institute offers advanced technology and individualized treatment, backed by Baylor's top-ranked genetics program, to patients from all over the world.

"If you've been told you have a difficult case, this is where you come," said Dr Sugarbaker, Director of the Lung Institute and Professor and Chief of the Division of General Thoracic Surgery at Baylor College of Medicine. "Patients come to us based on the reputation of the Lung Institute team for providing hope as well as superb medical care in even the most difficult medical conditions."

The Institute combines experts from more than a dozen pulmonary, surgery and related specialties at Baylor College of Medicine and Baylor St. Luke's and taps into the resources of internationally recognized genetics and genome sequencing programs. This collaborative approach to lung disease treatment means that patients are provided more options for a course of treatment.

Neurosciences

The NeuroScience Center at Baylor St. Luke's takes a comprehensive approach to evaluation, treatment, and long-term management of neurological diseases, while providing the expertise of leading neurologists, neurosurgeons, neuroradiologists, and neurophysiologists.

Baylor St. Luke's houses specialized neuro-specific clinical units, which include a 20-bed Neuro-Intensive Care Unit, a 42-bed Neuro Acute Care Unit, and dedicated Neurosurgical operating room suites. All of the neuro-specific units have RNs that are NIH Stroke Scale certified. Interventional Neuroradiology at the Neuro-Science Center has garnered international recognition for cutting-edge technology in the prevention and treatment of neurovascular diseases.

The Neurovascular Center, launched in 2005, offers multidisciplinary expertise from renowned interventional neuroradiologists. Neurointensivists, neurologists, and neurosurgeons all work collaboratively with neurointerventional radiologists to offer many treatment options for neurovascular disorders. In addition, they also work closely with internal hospital specialists to utilize diagnostic capabilities. Baylor St. Luke's is the first in Houston to operate CyberKnife in a clinical setting for treatment of intracranial tumors that continues to offer new hope to patients who have surgically complex tumors.

International Services

International Services at Baylor St. Luke's extends a gracious welcome to patients and families from around the world. Our multilingual professional team stands ready to manage all your medical services needs and related matters to make your stay with us more pleasant.

Services

- Second opinion
- Physician appointments and scheduling
- Language assistance
- Hotel reservations and long-term housing
- Air travel and ground transportation
- Air ambulance assistance
- Business center for patient and family members (e-mail, fax machines, photocopiers)
- Spiritual support for all faiths
- Specialized in cultural needs
- Purchasing of medical equipment

Business development initiatives

CHI St. Luke's offers clinical rotations for interested physicians and maintains affiliations with institutions and societies to benefit local communities through collaborative information exchange.

The International Services staff is available to answer your calls, faxes, and e-mails between the hours of 8am and 5pm (Central Time), Monday through Friday (except US holidays). If an emergency arises after office hours, dial the office number and the on-call international representative will assist you.

Contact us

- Telephone: +1-832-355-3350
- Fax: +1-832-355-3002
- international@stlukeshealth.org
- www.stlukesinternational.org

Nemours is one of the largest and most widely respected pediatric orthopedic practices in the United States – and the world

Nemours/Alfred I. duPont Hospital for Children in Wilmington, Delaware, is a recognized leader, both nationally and internationally, in the field of pediatric orthopedics. Since 1940, we've cared for children with the most complex orthopedic conditions and our legacy of excellence continues. Our orthopedic care is consistently ranked among the best in the nation by US News and World Report. In addition to handling more than 40,000 patient visits annually, our orthopedic team is actively involved in research and education. Nemours duPont Hospital for Children also offers one of the largest pediatric training programs for orthopedic residents and fellows in the United States.

Families travel from around the United States, and around the world, to be treated by our orthopedic specialists at Nemours for many reasons:

- nationally recognized orthopedic experts
- inpatient and outpatient orthopedic care
- innovative surgical techniques
- Nobel Prize-winning EOS imaging that uses the lowest dose of radiation possible
- access to experimental, multicenter drug protocols
- family-centered care
 - Families are part of the team and together er a personalized treatment plan is developed to meet the needs of each child.

"I am proud of the children we have cared for through the years, the clinicians we have educated, our life-changing research innovations, and our commitment to providing enhanced family-centered care, where parents and children are part of the decision-making process," says William Mackenzie, MD, Chairman, Department of Orthopedic Surgery, Nemours du-Pont Hospital for Children.

Highlights of the conditions treated at Nemours/Alfred I. duPont Hospital for Children

Cerebral Palsy Program

At Nemours/Alfred I. duPont Hospital for

Children, a team of world-class specialists in orthopedic surgery, pediatrics, neurology, neurosurgery, and rehabilitation work together to help each child reach their full potential. Cerebral palsy (CP) is the name for a series of neurological disorders caused by abnormalities in parts of the brain that control muscle movement.

Conditions treated

- foot and hip deformity
- neuromuscular scoliosis
- upper extremity problems
- gait problems
- spasticity
- movement disorders
- spinal dysfunction

Program highlights

- access to multidisciplinary team of specialists
- hip subluxation and dislocation prevention and treatment
- immediate mobilization protocol (minimizes the use of casting post-surgery)
- access to a specialized spasticity and movement disorders clinic
- physiatrist, orthopedist, physical therapist
- baclofen pump management

Skeletal Dysplasia Program

The Skeletal Dysplasia Program at Nemours duPont Hospital for Children is one of the world's foremost centers in the treatment of skeletal dysplasia, with more than 75 years of combined experience in the diagnosis and management of children with the condition. Treatment is directed toward maximizing mobility, correcting deformity, and improving a child's overall quality of life.

Conditions most commonly treated

- achondroplasia
- diastrophic dysplasia
- metatropic dysplasia
- morquio
- primordial dwarfism
- multiple epiphyseal dysplasia (MED)



- spondyloepiphyseal dysplasia
- pseudoachondroplasia

Program highlights

- access to world-renowned orthopedic and genetics experts, supported by a team of multidisciplinary specialists
- comprehensive, coordinated care plan
- advanced care of the spine and extremities including cervical spine stabilization, lower extremity and growth sparing procedures
- continuation of care to treat skeletal dysplasia patients to age 35

More about Nemours Children's Health System

As one of the largest children's health systems in the US, Nemours Children's Health System is also quickly becoming the pediatric healthcare provider of choice for international families and referring physicians. Through our world-class hospitals, specialty care, pediatric research, prevention and education programs, our health system reaches out to families around the world to help more kids grow up healthy.



PATIENTS COME FROM OVER 70 COUNTRIES. H HOPE KNOWS NO BORDERS.







60 dh

DUBAI

NWW

STROKE | BRAIN | SPINAL CORD | PEDIATRIC | CANCER

Global access to high quality medical care in the United States

US News & World Report has unveiled the 26th edition of the Best Hospitals rankings. The ranking is designed to help patients with life-threatening or rare conditions identify hospitals that excel in treating the most difficult cases and includes data and information on nearly 5,000 medical centers across the United States.

Massachusetts General Hospital, No. 2 last year, reclaimed the No. 1 spot on the Honor Roll, which highlights hospitals that are exceptional in numerous specialties. The Mayo Clinic, Johns Hopkins Hospital and UCLA Medical Center follow at Nos. 2 and 3. University of Texas MD Anderson Cancer Center is No. 1 in cancer care, the Cleveland Clinic is No.

The 2015-2016 Honor Roll

- 1. Massachusetts General Hospital, Boston
- 2. Mayo Clinic, Rochester, Minnesota
- 3. (tie) Johns Hopkins Hospital, Baltimore
- 3. (tie) UCLA Medical Center, Los Angeles
- 5. Cleveland Clinic
- 6. Brigham and Women's Hospital, Boston
- New York-Presbyterian University Hospital of Columbia and Cornell, New York
- 8. UCSF Medical Center, San Francisco
- 9. Hospitals of the University of Pennsylvania-Penn Presbyterian, Philadelphia
- 10. Barnes-Jewish Hospital/Washington University, St. Louis
- 11. Northwestern Memorial Hospital, Chicago
- 12. NYU Langone Medical Center, New York
- 13. UPMC-University of Pittsburgh Medical Center
- 14. Duke University Hospital, Durham, North Carolina
- 15. Stanford Health-Stanford Hospital, Stanford, California

1 in cardiology & heart surgery and the Hospital for Special Surgery is No. 1 in orthopedics.

Best Hospitals features national rankings in 16 specialties. In the 2015-16 rankings, 137 U.S. hospitals performed well enough in complex care to be nationally ranked in one or more specialties. Just 15 of these qualified for a spot on the Honor Roll by ranking at or near the top in six or more specialties.

The Best Hospitals methodology measures patient volume, risk-adjusted survival rates and adequacy of nurse staffing, among other care-related indicators. US News further expanded the number of physicians surveyed for the 2015-16 rankings.

Top 10 Hospitals in Cancer Care

- 1. University of Texas MD Anderson Cancer Center, Houston
- 2. Memorial Sloan Kettering Cancer Center, New York
- 3. Mayo Clinic, Rochester, Minnesota
- 4. Dana-Farber/Brigham and Women's Cancer Center, Boston
- 5. Seattle Cancer Care Alliance/ University of Washington Medical Center
- 6. (tie) Johns Hopkins Hospital, Baltimore
- 6. (tie) UCLA Medical Center, Los Angeles
- 8. Massachusetts General Hospital, Boston
- 9. UCSF Medical Center, San Francisco
- 10. Stanford Health-Stanford Hospital, Stanford, California

Top 10 Hospitals in Cardiology & Heart Surgery

- 1. Cleveland Clinic
- 2. Mayo Clinic, Rochester, Minnesota
- New York-Presbyterian University Hospital of Columbia and Cornell, New York
- 4. Brigham and Women's Hospital, Boston
- 5. Massachusetts General Hospital, Boston

"Patients deserve high-quality information on hospitals," said Ben Harder, chief of health analysis at US News. "We strive to provide them with the most comprehensive data available so they can make more informed decisions together with their doctor about where to undergo treatment."

US News first began publishing hospital rankings in 1990 as part of an expanding group of consumer advice products. Over the past 26 years, the Best Hospitals rankings have helped guide millions of patients and their families to high-quality hospital care when they need it most.

Best US hospitals by specialty www.usnews.com/best-hospitals

- 6. Duke University Hospital, Durham, North Carolina
- 7. Mount Sinai Hospital, New York
- Hospitals of the University of Pennsylvania-Penn Presbyterian, Philadelphia
- 9. Northwestern Memorial Hospital, Chicago
- 10. Cedars-Sinai Medical Center, Los Angeles

Top 10 Hospitals in Orthopedics

- 1. Hospital for Special Surgery, New York
- 2. Mayo Clinic, Rochester, Minnesota
- 3. Cleveland Clinic
- 4. Massachusetts General Hospital, Boston
- Hospital for Joint Diseases, NYU Langone Medical Center, New York
- 6. Rush University Medical Center, Chicago
- 7. Brigham and Women's Hospital, Boston
- 8. UCLA Medical Center, Los Angeles
- 9. Northwestern Memorial Hospital, Chicago
- 10. (tie) New England Baptist Hospital, Boston
- 10. (tie) UPMC-University of Pittsburgh Medical Center



"We have a new way to kill tumors. Identify the arteries feeding them and inject medicine directly into them."

-JOHN LOUIE, MD, INTERVENTIONAL RADIOLOGIST

At Stanford, we keep adding weapons to fight cancer. Now, by digitally mapping the arteries leading to tumors, our doctors can inject micro-beads of chemo straight into them. It's not only efficient, it can minimize the side effects of chemotherapy. **Discover more at stanfordhealthcare.org.**



Mayo Clinic





A new weapon in the fight against cancer Mayo Clinic's revolutionary proton beam therapy program

Cancer invades and destroys healthy organs and consumes the body's energy as it advances. Fighting cancer can be difficult, especially when it invades vital organs that are difficult to treat with traditional cancer therapies.

Mayo Clinic has a new weapon to fight back. On 22 June 2015, Mayo Clinic treated its first patient with a revolutionary approach to proton beam therapy. Mayo Clinic is treating patients with the most advanced technology in proton therapy: intensity-modulated proton beam therapy with pencil beam scanning. This exciting new technique focuses the treatment on the tumor more precisely than other treatments, and is better at avoiding the healthy organs that can be affected by the treatment.

Want to know more? Here are some answers to help you understand how Mayo Clinic is bringing this promising new therapy to patients.

■ What types of cancer benefit most from proton beam therapy?

Many cancer patients will benefit from proton therapy. Mayo Clinic has focused programs in the following types of cancer:

- Pediatric cancers
- Brain tumors
- Prostate cancer
- Breast cancer
- Gastrointestinal cancers
- Lung cancer
- Lymphoma
- Eye melanoma/ocular melanoma
- Head and neck cancers

• Spine tumors and tumors that come back after traditional radiation treatments

Does Mayo Clinic have special pro-

grams for treating pediatric cancers with proton beam therapy?

Mayo Clinic believes proton therapy has a unique role in pediatric cancers and has prioritized helping children and their families in their fight against cancer. Today, many pediatric cancers have significant cure rates – some higher than 90 percent. However, children cured of cancer can face crippling side effects from their treatment. Proton therapy may help dramatically improve the lives of these surviving children by reducing side effects and the risk of new cancers.

How does Mayo Clinic decide which patients receive proton beam therapy?

Mayo Clinic's approach to treating cancer patients is summarized in the motto of one of our founders, Dr William J. Mayo, who stated: "The best interest of the patient is the only interest to be considered." The physicians will work with all the specialties at Mayo Clinic to find the best treatment for you and your cancer. Many patients will benefit from proton therapy, but it is not an appropriate treatment for all patients. The physicians will help you connect to the outstanding physicians in other areas when other treatments are better suited for your medical situation.

■ Is Mayo Clinic the first institution to use pencil beam scanning to treat cancer patients?

Only a few treatment facilities around the world offer this advanced proton therapy technique. All eight treatment rooms at Mayo Clinic's two facilities exclusively feature state-of-the-art pencil beam scanning and intensity modulated proton therapy. How do I know if I'm a candidate for proton beam therapy at Mayo Clinic?

People who would like to be considered for proton beam therapy at Mayo Clinic must schedule an appointment for a radiation oncology consultation. Our doctors and other specialists meet with the patient, review the case and recommend the treatment course they feel is best, whether that is proton beam therapy or another option.

Do I need a referral from my doctor to be seen at Mayo Clinic?

You do not need a referral from a doctor. You can contact our International Appointment Office and request a radiation oncology consultation. We can be reached by phone at +1-507-284-8884 or by email at *intl.mcr@mayo.edu*. Office hours are 7am to 5pm (Central Standard Time) Monday through Friday.

What should I bring to a radiation oncology consultation at Mayo Clinic?

Our patient appointment coordinators will provide you with a list of medical records needed in advance of your appointment.

What is it like at Mayo Clinic? How do I get there? Where do I stay?

Mayo Clinic has been taking care of patients from all over the world for more than 150 years. We want to help make your travel to Mayo Clinic as easy as possible. We provide information and a variety of services to help, including language translation services. We have patient experience coordinators to help you manage your stay, free Concierge services to help plan your stay, and fee-based Patient Travel Services. MEN



Children's Mercy International Services

+1 816-701-4524 international@cmh.edu

ChildrensMercy.org/ InternationalServices

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At Children's Mercy, our care and research has transcended borders for decades. Our comprehensive services allow us to offer the most advanced care and achieve optimal outcomes, even for the most complex cases. We're world-renowned for clinical excellence and innovation in areas such as asthma, cancer, cardiology, and nephrology, as well as orthopaedic, neurologic, plastic, urologic and cardiac surgery. And our Center for Pediatric Genomic Medicine is an international leader at providing rapid genome sequencing to help better diagnose and treat pediatric patients. For more information on how we can partner to help one of your patients, contact us today.





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Linking science to clinical research

Chicago's Robert H. Lurie Comprehensive Cancer Center of Northwestern University puts cutting edge clinical research into practice every day

Treating more than 10,000 new cancer cases each year, Chicago's Robert H. Lurie Comprehensive Cancer Center of Northwestern University – *cancer.northwestern. edu/home/index.cfm* – links basic science to clinical research through prevention initiatives, laboratory research and individual clinical investigations. One of just 26 centers that develop national guidelines on cancer treatment as part of the National Comprehensive Cancer Network (NCCN), the Lurie Cancer Center has a major impact on the way oncology is practiced today.

"Our robust programs focus on both clinical research and care," said Leonidas Platanias, MD, PhD, Director of the Lurie Cancer Center and the Jesse, Sara, Andrew, Abigail, Benjamin and Elizabeth Lurie Professor of Oncology.

"In the last few years, there has been a major expansion of the operations of the Lurie Cancer Center centered on the development of new treatments and defining new trends in cancer research."

Practicing tomorrow's oncology today

The Lurie Cancer Center has strong clinical care programs in every area of cancer treatment – from solid tumors to leukemia. The Center's stem cell transplant program, for example, is a leader in both volume and types of transplants, averaging over 250 transplantations each year with survival rates that consistently exceed the US national average.

In addition to traditional research programs, the Lurie Cancer Center's physicians and scientists are studying novel new ways to translate laboratory research into practical, clinical care.



"We do this by bringing together basic laboratory researchers with clinical investigators to try and systematically think and design new clinical trials based on unique information that comes from the lab," said Platanias. "For example, in the lab, we found that one drug used for controlling diabetes can affect also the metabolism of and even kill cancer cells. We found that when combined with chemothera-



Leonidas Plantanias, MD, PhD, Director of Lurie Cancer Center

py, it may be able to enhance traditional treatment for leukemia. This is just one of many trials."

Recently, the Lurie Cancer Center started an initiative aimed at providing personalized cancer care for patients with refractory cancers called Northwestern OncoSET. "SET" stands for Sequence, Evaluate, Treat. The program analyzes the cancer genome of individual tumors to identify abnormalities and then uses the information to tailor individual clinical trials accordingly.

"If at some point the standard treatment options are becoming more limited, our ability to offer an opportunity for participation in an individualized, more advanced clinical trial can expand those options," said Platanias. "We try to tailor treatment based on the genomic makeup of a patient's tumor. We believe this is the way oncology will be practiced tomorrow."

Northwestern Medicine Developmental Therapeutics Institute

The Lurie Cancer Center also launched the Northwestern Medicine Developmental Therapeutics Institute (NMDTI – *dti.nm.org*) to study and develop novel approaches to treatment. NMDTI's research is aimed at finding new targets for anticancer agents, immune therapies for cancer treatment and clinical trials to assess the effectiveness of new agents. For example, in the lab, we found that one drug used for controlling diabetes can affect also the metabolism of and even kill cancer cells. We found that when combined with chemotherapy, it may be able to enhance traditional treatment for leukemia. This is just one of many trials.

Spreading the lessons learned from onsite research and clinical practice, the Lurie Cancer Center hosts seminars to present and discuss new research findings, bringing experts together from all over the country and the world.

"We are trying to facilitate the dissemination of new research trends, transforming the clinical practice of oncology with the myriad of clinical trials and new treatments that we develop out into the community," said Platanias.

"Through education, outreach and by training other doctors both locally, nationally and internationally, together we can put forth the next generation of cancer treatment." • For more information, please visit:

cancer.nm.org MEH

Grants at work

The National Cancer Institute (NCI) – the US government's agency for cancer research and training – provides grants to support research efforts at the university, hospital and foundation level. In 2015 alone, the Lurie Cancer Center was the recipient of two large NCI awards aimed at improving cancer treatments and accelerating research.

Use of nanotechnology to develop next-generation cancer treatments Grant from NCI: \$11.7 million, 5 years

Led by Chad A. Mirkin, PhD, Director of the International Institute of Nanotechnology and Leonidas Platanias, MD, PhD, Director of the Lurie Cancer Center and the Jesse, Sara, Andrew, Abigail, Benjamin and Elizabeth Lurie Professor of Oncology at Northwestern University Feinberg School of Medicine, the Northwestern University Center for Cancer Nanotechnology Excellence will use nucleic-acidbased nanoconstructs to gain access to intracellular environments in hopes to discover new aspects of cancer biology and create new, effective cancer treatment options.

cancer.northwestern.edu/news/ nanotechnology2015

Specialized Programs of Research Excellence (SPORE) in prostate cancer

Grant from NCI: \$11 million, 5 years Led by William Catalona, MD, Director of the Lurie Cancer Center's Clinical Prostate Cancer Program and Professor of Urology at Feinberg, this grant will further four major existing SPORE program research projects to:

• Determine germline genetic variations that predispose individuals to prostate cancer and help to identify which patients need immediate treatment and which can be managed with active surveillance.

• Address the need for new treatments for men with advanced cancer that no longer responds to current therapy. *cancer.northwestern.edu/ prostatespore*

A chance to reach full potential with cochlear implant surgery

Shortly after Max was born, his parents received devastating news: their baby had failed standard newborn hearing tests in both ears. "I thought, 'This can't be true, there's no history of hearing problems in our family," says his mother, Kristen. Hearing is critical to brain development. It enhances every aspect of a child's life including awareness of their physical environment, learning a language, speech, reading and engaging with family.

World-renowned surgeon at Lurie Children's

Kristen and her husband, David, were referred to Nancy M. Young, MD, a worldrenowned surgeon and Head of the Section of Otology and Neurotology at Ann & Robert H. Lurie Children's Hospital of Chicago. Dr Young and her team determined that Max was a candidate for simultaneous cochlear implantation surgery in both ears.

More than 1,300 cochlear implant surgeries have been conducted at Lurie Children's, making it one of the largest pediatric cochlear implant programs in the world. A cochlear implant is a device that uses computer technology to stimulate nerve fibers in the inner ear in order to provide hearing. It is specifically designed to give children information critical to understanding spoken language. Children with significant sensorineural hearing loss and auditory neuropathy spectrum disorder are potential candidates for this technology. The program was founded by Dr Young, and it was one of the first to offer this technology to children with complicating medical conditions, developmental delays and complex ear anatomy. Dr Young was also the first surgeon in the United States trained in advanced ear surgery to practice full time at a children's hospital.

Max first underwent comprehensive evaluation of his hearing loss including the degree of benefit he received from hearing aids before cochlear implantation was recommended. At age 7 months, both of his ears were successfully implanted at Lurie Children's and he was able to go home with his parents that evening. Several weeks later Max heard for the first time when his devices were programmed by his Lurie Children's audiologist.

Experience counts

Our Audiology Department is available to diagnose hearing loss and fit hearing aids in infants and children of all ages. If hearing aids are not enough to enable the child to hear speech and learn to talk, a cochlear implant may be the best treatment.

The multidisciplinary cochlear implant team at Lurie Children's has a wealth of experience caring for children with sensorineural hearing loss and auditory neuropathy. Our six pediatric audiologists who specialize in cochlear implantation have more than 50 years of combined experience in assessing implant candidates and doing the computer programming needed to fine-tune the implant to meet each child's distinctive needs.

The full team includes pediatric audiologists, a nurse specialist, speech pathologists, an educator, a music therapist and administrative support staff. Lurie Children's also has cochlear implant assistants on staff to help families manage implant equipment and accessories. They are experts at troubleshooting all cochlear implant systems and are available to assist families by phone, e-mail or in-person.

A future astronaut

Today, Max is an active 9 year-old who has full access to sound and normal speech development, and enjoys playing with his 7 year-old brother, Jackson. Max's language is on par with his peers and he envisions having a busy adulthood, according to his mom. "Max says that when he grows up he



Nine-year old Max has full access to sound and normal speech development after a cochlear implants in both ears at 7 months old.



wants to be an astronaut, a rescue diver and a jet pilot," says Kristen.
Learn more at: www.luriechildrens.org/cochlear

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Indiana University Health



Building partnerships in MENA

Collaborations in Capacity Building and Advanced Patient Care

Written by PHI Staff

Middle Eastern countries are undertaking major efforts to improve national health systems, and to ensure that treatment abroad programs are cost-effective. As one of the world's premier academic medical systems, Partners HealthCare is aligned with these objectives by serving the Middle East in three ways: health system capacity-building; advanced patient care; and integrated collaborations combining both.

Capacity-Building

For well over a decade, Partners has worked with health care organizations in the Middle East to upgrade local infrastructure and capabilities. We emphasize knowledge transfer, and the development of sustainable leadership and workforce skills for physicians and nurses. We are not seeking to own or manage health care facilities. While our engagements span a wide range of activities, we are especially strong in the following areas:

• Facilities Planning & Development – Partners provides support for the design, construction, and commissioning of new facilities for patient care and education, as well as expansion or modernization of existing facilities. We work closely with architectural teams, engineering design teams, and equipment vendors to minimize risk and increase quality as clinical and/or education program plans are translated into physical infrastructure. In an ideal project, our work begins long before construction. We play an active role in the preplanning stages, advising on strategy and helping to develop the clinical and educational program plans. Our clinical program planning process taps into Partners deep bench strengths across the full continuum of clinical care, with active practitioners who can provide input on best practice, innovations in care, and trends in their respective specialties.

Quality and Patient Safety – Rapidly evolving technology, and growing pressure on health care organizations to reduce costs can have unintended and negative consequences for patient safety, presenting challenges for health care systems around the world. Partners' Quality and Patient Safety services help you develop standard operating procedures, and train staff on best practices and evaluation methods to meet or exceed international accreditation standards and achieve measurable improvements in care delivery. PHI had a strong presence at this year's International Society for Quality in Healthcare (ISQua) conference in Doha, Qatar. Visit www.partners.org/international/ISQua2015 to view presentations, abstracts and case studies on quality and patient safety projects.

• Disaster Management – Hazardous events are a part of today's world. Health care organizations must know what to do before, during and after an emergency to ensure an effective response. Partners and Massachusetts General Hospital General Hospital Center for Disaster Management (MGH-CDM) provide customized training in emergency preparedness and disaster response for executive leadership, clinicians and staff.

• Population Health Management – A 2013 World Bank study documenting changes in the burden of disease between 1990 and 2010, noted: "In the Middle East and North Africa, non-communicable diseases such as heart disease (up by 44%), stroke (up 35%), and diabetes (up 87%) are causing more premature death and disability than they did in the past." These diseases constitute a disproportionate share of public and private expenditure on health services in MENA, and a large percentage of the patients sent abroad by Middle Eastern governments. At Partners, we have undertaken major efforts to improve the long-term management of specific high cost patient populations. Many of the tactics developed by Partners can be adapted to address non-communicable diseases in the Middle East. Program tactics are developed in three domains: clinical best practices and guidelines for specific patient population; organizational strategies such as re-designed care teams and roles; and data systems infrastructure and analytics to measure performance and improve results*.

Advanced Patient Care

Middle Eastern patients typically come to

Partners hospitals for complex medical problems such as cancer, neurosurgery, orthopedic surgery, diabetes, and heart disease. We offer state-of-the-art diagnostics, genetically tailored drug therapies, minimally invasive surgical techniques, world class post-surgical rehabilitation, and compassionate mental health services. In many cases patients can obtain expert rapid second opinions without leaving home, or remote consultations to better plan their visit to our hospitals. Any patient, or physician referring a patient, can be assured they will find exceptional expertise at Partners, as evidenced by the U.S. *News and World Report* rankings for 2015-16:

- Massachusetts General Hospital #1 overall, and high rankings in all 16 specialties
- Brigham and Women's Hospital (BWH) #6 overall, and high rankings in 13 specialties
- Dana-Farber/Brigham and Women's Cancer Center #4 in adult cancer
- Spaulding Rehabilitation Hospital #6 in rehab
- McLean Hospital #4 in psychiatry (topranked free-standing psychiatric hospital)

The BWH and MGH each offer dedicated support services for international patients. To inquire about our services or request an appointment:

 Massachusetts General Hospital (MGH) Tel: 011-617-726-2787 Web: http://www.massgeneral.org/international/

 Brigham and Women's Hospital and Dana-Farber Cancer Institute Tel: 011-617-732-5777 Web: http://www.brighamandwomens.org/ Patients_Visitors/international/default.aspx

 Partners HealthCare International also serves as a gateway for patients seeking care at one of our hospitals. Email: internationalreferral@partners.org

Integrating Advanced Care and Capacity-Building Collaborations

Referring patients abroad is often thought to be inconsistent with efforts to upgrade local health system capabilities. This narrow view impedes opportunities to create effective linkages between local capacity-building projects and treatment abroad programs. We welcome opportunities to connect these efforts through integrated collaborations that embed treatment abroad within the framework of delivering the right care, in the right

PARTNERS INTERNATIONAL

Population Health Management

The challenge:

Traditional health care service delivery has focused on discrete services delivered to individual patients by clinicians with limited information and tools to predict optimal outcomes. The result is often unnecessary, costly and non-standardized care with less-thanoptimal outcomes.

The solution:

Population Health Management applies strategies and tactics to improve service delivery for defined groups of individuals across the continuum of care, and over time. Our model helps you develop information tools to gather and deploy evidence-based clinical guidelines, and organize clinical teams to optimize care to groups of patients at the lowest necessary cost.



setting. Benefits of integrated collaborations that embed treatment abroad within a broad-

- er framework may include:Improving system cost-effectiveness by
- focusing on high cost patient populationsLinking referral of specific diseases to
- development of specialty capabilities in those areas
- Reducing unnecessary referral of patients abroad through evidence-based referral criteria
- Streamlining case reviews and referral processing
- Improving longitudinal management of chronic diseases once the patient returns home
- Optimizing patient experience.

How We Develop Relationships

Most of our international collaborations begin on an advisory basis. This is similar to traditional consulting in that services are billed on a fee-for-service basis. Unlike a traditional consultancy, however, there is usually mutual interest in working more closely over time to fully engage the tri-partite academic mission of patient care, teaching and research. Relationships that progress in this way may evolve to branded clinical affiliations, academic collaborations or other types of long-term relationships.

To learn more about both capacity-building and patient care services at Partners, visit us online at *www.partners.org/international* or contact us directly at *partnersinternational*@ *partners.org*.

I Hospital for25 Years Straight

The Rehabilitation Institute of Chicago (RIC) has once again been named the #1 rehabilitation hospital by U.S. News & World Report – a recognition unmatched by any hospital of any kind anywhere in the United States. Each year they treat over 55,000 patients from more than 70 countries throughout the world.

Experts say RIC is worth the trip

RIC pairs the world's finest minds in physical medicine and rehabilitation research with specialized care for a patient's best chance at a faster and more complete recovery.

For decades their approach has garnered top rankings from leading independent organizations across the country including:

- #1 in Clinical Care U.S. News and World Report
- #1 in Research National Institutes of Health
- #1 in Academic Training Northwestern University, Feinberg School of Medicine
- #1 in Nursing Magnet Recognition, American Nurses Credentials Center

RIC holds an unparalleled research distinction with a record eight, multiyear, multi-million-dollar federal research designations. Currently there are also more than 350 clinical studies underway dedicated to improving treatments and creating better outcomes for patients.

Rankings are nice. Successes are best From Accident to Activist

Laetitia Hatem, a 17-year-old girl from Beirut, loved riding horses. One day, her ride ended in a frightening fall that damaged her spinal cord and left her paralyzed from the neck down.

After a devastating diagnosis from their doctor in Lebanon, Laetitia's father found



RIC online. He was intrigued by the deep scientific focus and interdisciplinary care and flew Laetitia and the family over 10,000 miles to get her admitted to RIC.

With the support of her family, RIC's care team, and the world's most advanced technology, Laetitia walked out of the hospital under her own power. Laetitia is now not only back to riding horses, but running marathons, attending university and is a spokesperson for physical medicine and rehabilitation in Lebanon.

A Full Family Recovery

Roberto Rodriquez, one of Mexico's most successful businessmen, suffered a sudden debilitating stroke in July of 2014. His wife, Sandra emailed RIC seeking a more advanced rehabilitation and comprehensive stroke program than



what was available for him at home. She was immediately connected to one of our Spanish-speaking Global Patient Services coordinators who assisted with all the details and logistics to get Roberto to RIC.

When he arrived at RIC, Roberto needed assistance to stand, required a feeding tube for nutritional support and had a tracheostomy tube to protect his airway. His speech was slurred and he was weak, but still determined to start therapy to improve his condition. After just one month in the intensive stroke program, he was eating independently, breathing without the tube and ready to return to work.

"At RIC people are willing to give their time and life to help patients find their way back. They have the knowledge, patience, guidance and unwavering commitment to making Roberto who he used to be," Sandra Rodriquez said. MEH



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Located in Chicago, Northwestern Medicine is one of the nation's top-ranked hospitals. Our breakthrough research, leading-edge treatments and commitment to patients across every medical discipline have made us a destination of choice for doctors and patients from all over the world. Northwestern Medicine International Health offers culturally sensitive, compassionate care from the initial consultation through treatment, recovery and the return home. We also assist with communication between physicians and patients, so you can focus on the most important thing: your health.

internationalhealth.nm.org





From Bahrain to Boston for very early onset IBD care

Every year, 2,000 children and their families travel to Boston Children's Hospital for complex pediatric care from around the globe. Here is the story of one family's journey from Bahrain to Boston to receive care for a rare and debilitating condition called very early onset inflammatory bowel disease (VEO-IBD).

During a recent visit to Boston Children's Hospital, three-year-old Gassen Boabed quietly entered the waiting room of the hospital's Inflammatory Bowel Disease Center. With mom and big brother in tow, the tiny toddler, boasting a pretty pink headband and nail polish to match, sat at a child-sized table, picked up crayons and started coloring. She was at ease, and her surroundings were familiar.

For the past year and a half, Gassen, a native of Bahrain, has been receiving treatment at Boston Children's for VEO-IBD. The condition, which affects infants and children under 5, causes severe abdominal pain and bloody diarrhea, and it slows growth. The cause(s) of VEO-IBD remain unknown, but likely include a combination of genetic and environmental factors.

"Boston Children's has been taking very good care of Gassen and us as well," says Gassen's mother Manal, with the assistance of an interpreter from the hospital's Interpreter Services Department. "The way they have been dealing with her case has been excellent."

Gassen shows symptoms of VEO-IBD

Soon after Gassen was born, her parents knew something was wrong. She had littleto-no appetite, was slow to gain weight and had painful bowel movements and diarrhea. "I expected her to gain weight, but she didn't," says Manal.

When Gassen's symptoms intensified, and her condition worsened, the Boabeds sought the advice of a Bahraini pediatrician, but a diagnosis could not be confirmed.

Finding help for very early onset IBD

"My husband and I started doing research on the Internet. We realized there are other children with this condition," Manal says. "And then we started to look at hospitals that deal with this condition." Their research led them Boston Children's, where they found the Snapper Laboratory.

Dr Scott Snapper, director of the Inflammatory Bowel Disease Center, and colleagues are spearheading a new clinical research program and leading the international Very Early Onset IBD Consortium.

In 2013, Tariq and Manal Boabed packed up their family and traveled 6,400 miles from Bahrain to Boston Children's, where Gassen has been receiving life-saving care ever since.

"We had no reservations about traveling to the United States except for the language [barrier]. We knew a few words, but were worried about deeper conversations," says Gassen's father Tariq.

VEO-IBD treatment miles from home

"When Gassen arrived at Boston Children's, she had severe Crohn's disease, was in chronic pain from infections and was malnourished. She also had severe lung infections," recalls Dr Athos Bousvaros, associate director of Boston Children's Inflammatory Bowel Disease Center. Her condition was life-threatening, he says.

Gassen's treatment started with conventional IBD medications. However, her symptoms did not improve. Further testing by Snapper's group, which was led by Dr. Dror Shouval, who cared for Gassen with Bousvaros, showed the toddler had a ge-

Ranked as the #1 pediatric hospital by U.S.News & World Report, Boston Children's Hospital has the processes and staff in place to support international physicians and families as they seek care with us. For more information about International Health Services at Boston Children's, visit www.boston childrens.org/internationalreferral.



netic immune deficiency, which prompted a stem cell transplant.

"It wasn't easy in the beginning," recalls Tariq. "We were in the hospital more times than we were out of the hospital. But we've had good results."

Gassen's stem cell transplant was successful, and she is doing great, Bousvaros adds. "She is eating well with no signs of infection."

Manal and Tariq say, though it has been challenging to be so far from home, their daughter is receiving excellent and compassionate IBD care. "Gassen loves the nurses and doctors. When we leave the hospital, she wants to go back to see her friends," Manal says. "Hopefully, she'll be a doctor in the future."

The road home to Bahrain

For the next few months, Gassen will be monitored at Boston Children's. However, the goal, Bousvaros says, is for this "sweet, sociable and engaging" toddler, to return to her homeland – free of IBD – and for the Boabed family to resume their lives.

"They are an extraordinarily devoted and loving family," Bousvaros says. "And their devotion is evident. They traveled halfway across the world to give their child a fighting chance."

Academic partnership provides innovative treatments for patients

Indiana University Health has been ranked by US News & World Report in the top 3% of hospitals in the US. Our unique partnership with Indiana University School of Medicine gives our physicians and patients access to innovative treatments and leading edge therapies.

Patients come from all over the world to Indiana University Health. We complement our highly skilled surgeons and state-of-the-art operating facilities with compassionate professionals who will help international patients and their families feel welcome. A specially trained International Patient Coordinator will help make your stay in Indianapolis comfortable, so you can focus on your treatment, recovery and wellness.

Clinical expertise

IU Health offers a full range of specialty and primary care services for children and adults, including the following areas of clinical expertise:

• Cancer: IU Health Cancer Centers are Indiana's largest network of cancer specialists and are connected through IU Health Simon Cancer Center – the state's only National Cancer Institute (NCI)designated cancer center that provides patient care.

• Cardiovascular: IU Health Cardiovascular specialists treat some of the most complex cases, offer unequaled care, combine innovative technology with advanced procedures and have a strong reputation for patient safety.

• Neuroscience: Our nationally ranked neurology and neurosurgery program expertly treats common disorders of the brain, spine, nerves and muscles.

• Orthopedics: IU Health Orthopedics provides comprehensive joint, spine, bone and muscle care for adults and children.

• Pediatrics: Ranked among the top children's hospitals in the nation by US News & World Report, Riley Hospital for Children at Indiana University Health of-



fers comprehensive children's care – from the routine to the most complex.

IU Health International Patient Services

One of our International Patient Coordinators will work with you, your insurance company and/ or embassy/government to secure financial clearance for your planned treatment. If you are a self-pay patient, we will provide a detailed cost estimate and the deposit amount required before you begin your treatment. We will provide the necessary documentation to expedite the processing of your visa to travel to Indianapolis. A representative will meet with you and your family shortly after arrival and provide you with an IU Health International Patient Identification Card for registration. We will review and discuss the financial arrangements, provide an introduction to Indianapolis and resources available on the IU Health campus. We offer interpreting services free of charge to non-English-speaking patients. Our medical interpreters are trained in cultural competency and adhere to national standards of practice and ethics.

Getting started

Complete the IU Health International Patient Information Form found at *iuhealth*. *org/patients/international-patient*. If you A specially trained International Patient Coordinator will help make your stay in Indianapolis comfortable, so you can focus on your treatment, recovery and wellness.

have questions or would like additional information, please call +1.317.963.2020 to speak with an IU Health International Patient Services team member. Once we receive this information we can begin the initial record review and consultation process. Send us your most current medical records, in English, for an IU Health specialist physician to review. If you have had CT, MRI, or PET scans, we will request those images in a digital format. If you have undergone surgery or biopsies, we will request pathology slides or paraffin blocks for review and verification of the diagnosis. After the medical record review process is complete, we will inform you if you are a candidate for treatment, then schedule your initial consultation and subsequent treatment. MEH





Transforming care, from research to real life

Children's Mercy Kansas City is an independent, non-profit 354-bed pediatric health system, serving half a million patients each year. Children's Mercy has been ranked by U.S. *News & World Report* as one of "America's Best Children's Hospitals" and received Magnet recognition three consecutive times for excellence in nursing services. Our faculty of more than 600 pediatric subspecialists and researchers is actively involved in clinical care, pediatric research, and educating the next generation of pediatric subspecialists.

Nephrology

The multidisciplinary team in the Division of Nephrology provides a comprehensive, individualized approach to care that's rooted in the latest medical developments. Ranked one of the top five programs in the United States, the Division offers a full array of dialysis modalities, allowing it to provide continuous renal replacement therapy, peritoneal dialysis, in-center hemodialysis and one of the nation's few pediatric home hemodialysis programs.

The Division's dialysis outcomes and one- and three-year pediatric kidney transplant graft survival rates exceed the national averages and consistently rank among the highest in the country.

Gastroenterology

The Division of Pediatric Gastroenterology is nationally recognized for pioneering groundbreaking approaches in treatment and for conducting research to improve the effectiveness of care for children with intestinal, liver and nutritional disorders.

The Division's biopsychosocial approach to chronic pain has delivered resolution or near resolution of symptoms in 70 to 80 percent of patients within six weeks. The Liver Care Center and Liver Transplant Programs have outstanding outcomes, and its Center for Intestinal Rehabilitation and specialized programs for hereditary polyposis, motility and other disorders put the hospital at the leading edge of pediatric gastroenterology.

Heart

Through innovative research, the Ward Family Heart Center at Children's Mercy Kansas City is at the forefront of improving care and quality of life for children with congenital and acquired heart disease. From fetal cardiology to the latest ventricular support devices and heart transplants, the Center's team of dedicated experts is equipped to treat all pediatric heart conditions.

Here, evidence-based care is a reality. The HeartCenter database helps transform information into action. Updated constantly, this real-time, clinical information allows staff to monitor and modify treatments for the best patient outcomes. Likewise, the Center's Cardiac High-Acuity Monitoring Program (CHAMP) App performs constant home monitoring of pediatric heart patients for immediate response and intervention.

Hematology/Oncology

Each year, the Division of Pediatric Hematology, Oncology and Bone Marrow Transplantation at Children's Mercy Kansas City provides comprehensive care to nearly 2,000 children with childhood cancers, sickle cell disease, hemophilia and other blood disorders, with survival rates frequently above national averages.

A leader in research, at any given time the Division is participating in more than 80 to 100 clinical and laboratory trials, including several national trials led by its own investigators. As the primary pediatric cancer provider and the only NCI Children's Oncology Group institution in the Midwest Cancer Alliance, Children's Mercy is a full partner in the National Cancer Institute-designated University of Kansas Cancer Center Consortium. The Division also has received accreditation from the American College of Surgeons Commission on Cancer and the Foundation for Accreditation of Cellular Therapy, and directs a federally-designated Hemophilia Treatment Center.

Neonatology

With more than 25 neonatologists, the Division of Neonatology at Children's Mercy Kansas City provides the latest treatment options for children facing chronic lung disease, birth defects or complications of prematurity.

Children's Mercy is at the forefront of research and innovation to improve outcomes for critically ill newborns through its Center for Infant Pulmonary Disorders and membership as one of only 18 hospitals in the NICHD Neonatal Research Network.

With the region's only Level IV NICU and the Elizabeth J. Ferrell Fetal Health Center, Children's Mercy provides care before, during and after delivery of infants with complex fetal anomalies.

Endocrinology

Recognized for being on the leading edge in diabetes prevention, treatment and research, the Division of Pediatric Endocrinology and Diabetes is one of the largest full-service programs in the country. The program was recently selected as one of only 18 designated clinical centers for TrialNet, the National Institutes of Healthfunded network dedicated to the study, prevention and early treatment of type 1 diabetes.

In addition, the Division's comprehensive endocrinology services include: Endocrine Disorders in Cancer Survivors Clinic, 22Q Deletion Syndrome Clinic, Cystic Fibrosis/Endocrine Clinic, GUIDE Clinic, Gender Pathway Services Clinic, Thyroid Nodule Clinic and Great Heights Turner Syndrome Clinic.

For more information

We welcome the opportunity to partner with you. For more information, contact Children's Mercy International Services at +1 (816) 701-4524 or visit Childrensmercy.org/ internationalservices. MEH



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A patient-centered, research-driven health system for the future

More than a century ago, Johns Hopkins revolutionized American medicine with the opening of The Johns Hopkins Hospital (1889) and the Johns Hopkins University School of Medicine (1893) by integrating patient care, medical research and education the gold standard for modern academic medical centers. Today, the flagship hospital is part of a \$7.7 billion integrated global health enterprise featuring six hospitals, multiple primary and specialty care facilities, and managed care and home care providers in locations spanning Maryland, Washington, D.C., and Florida. Advanced treatments for a wide range of adult cancers, medical screenings and health checkup services are also available at our Johns Hopkins Singapore location.

World-renowned experts come together

Johns Hopkins doctors are in the vanguard of their fields. Together with highly skilled nurses and technicians, this unmatched combination of talents works as a team to treat complex illness from all perspectives.

Customized care for international patients

Johns Hopkins Medicine International's team of more than 100 care experts from over 30 countries serve as the patient's guide to Johns Hopkins' leading-edge medicine. We provide the highest level of service in a compassionate, discreet and respectful manner.

Our dedicated team seamlessly combines medical needs, individual preferences, and cultural, linguistic and religious expectations into a tailored experience that makes Johns Hopkins feel as close to home as possible. A medical concierge serves as the patient's personal liaison to Johns Hopkins before his or her visit to offer guidance and coordinate medical services and accommodations. Throughout the stay, a care coordinator guides the patient to medical appointments, provides interpretation and is available whenever needed.

We take care of everything before, during and after the visit. At every step, we want to make the visit as easy as possible. We want the patient and family members to be comfortable and stress-free.

Cancer

At the Johns Hopkins Kimmel Cancer Center, research scientists and clinicians work closely together, quickly transferring new treatments from the laboratory to the clinical setting.

World-renowned pathologists here can identify cancer cells at a much earlier stage of diagnosis, ensuring the best outcomes. Surgeons and oncologists work together to develop the best course of treatment. The center also features many multispecialty clinics that offer patients comprehensive diagnosis, staging and treatment planning in a single day.

Head and Neck

Our skilled otolaryngologists-head and neck surgeons are experts who treat sometimes rare but always complex conditions. These clinician-researchers are passionate investigators who constantly search for better ways to diagnose and treat conditions of the head and neck.

Heart and Vascular

World-renowned cardiologists and cardiac and vascular surgeons at the Johns Hopkins Heart and Vascular Institute provide comprehensive care of the highest quality, ensuring that patients receive the most advanced treatments known to medicine.

Neurology and Neurosurgery

Johns Hopkins is the birthplace of neurosurgery – it first became a specialty here in 1902. Our neuroscientists continue to improve patients' lives by sharing ideas across disciplines and joining forces to develop the strongest individualized treatment plans.

Orthopedic surgery

Whether a patient is a young person with degenerative hip disease, a car accident victim with severe pelvic trauma, an athlete with knee ligament damage or a

Johns Hopkins Medicine Care Locations



chronic back pain sufferer who would like to avoid major spine surgery, Johns Hopkins' orthopedic experts can help.

Transplantation

Johns Hopkins is one of only a few centers in the United States to offer a comprehensive array of transplantation services for adults and children. Our experts developed a revolutionary method of filtering a patient's blood to enable kidney transplantation from any qualified donor. Since then, our surgeons have performed the nation's first three-way, five-way, six-way and eightway kidney-paired donation transplants.

Urology

Physicians with the Brady Urological Institute have been pioneers in their field and were the first to perform many landmark operations, including the nerve-sparing prostatectomy.

■ For more information: +1-410-502-7683 jhicare@jhmi.edu hopkinsmedicine.org/international



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Why do doctors from 92 countries and every corner of the world trust their patients to us?



For more than 120 years, Children's Hospital of Pittsburgh of UPMC has been at the forefront of pediatric medicine. We're consistently ranked one of the top hospitals in the United States by U.S. News & World Report.

Our experience, expertise, and ongoing commitment to innovation and compassionate care are reasons why patients from around the world travel to Children's Hospital for transplantation, cardiac care, brain care, ophthalmology services, and more.

At Children's, patients and families from the Middle East find a welcoming medical community that provides outstanding care, frequent communication with referring physicians in their home country, appointment and checkup scheduling, discharge planning, and follow-up — all in a culturally sensitive environment. We call it PassportCare.

To refer a patient or seek a consultation, contact our International Services team at +1-412-692-3000, or by email at international@chp.edu.



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