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Uses of AI in Pediatric Cardiology ... an Occasional Column

John Moore, MD, MPH

This year at the 8th World Congress, I deviated from my usual pattern of more or less exclusively attending interventional sessions. Having not given much prior thought to uses of Artificial Intelligence in Pediatric Cardiology or Medicine in general, I decided to see what was going on in the Artificial Intelligence (AI) sessions. Wow, it was "eye-opening."

I was aware of AI being used in specific tasks, such as in analysis of medical images, alerting physicians to drug interactions and in some medical administrative tasks. New to me was the emergence of AI which has general cognitive capabilities and which may be capable of assisting users with a much wider variety of different tasks.

Released late in 2022, Chat GPT and GPT-4 are among these AIs. They are Large Language Models (LLMs), which use a "prompt" as a starting point. These AIs sequentially build reasonable "continuations" to previously existing texts, drawing on a huge base of digital learning (basically, everything on the internet, all digital books etc.). The completed "response" is the final result of a complex iterative process.¹ In theory, Chat GPT and its more advanced version GPT-4 may be useful in a wide variety of medical applications, including health care documentation, health data analysis, diagnosis, research and education.^{2,3}

In this piece, I consider whether GPT-4 can have a role in patient counseling. GPT-4 is available through several cell phone Apps. I downloaded an App called ChatOn-AI Chat Bot Assistant. ChatOn provides written responses to prompts from the user. A response starts to appear immediately after the prompt is sent and is completed within a few seconds.

So, can we use AI to counsel patients? I prompted ChatOn as follows: *Explain the Fontan Procedure to a patient's parents.* I received the following response:

The Fontan Procedure is a surgical procedure that is usually performed on children born with a specific type of congenital heart defect known as a single ventricle defect. In a healthy heart, oxygen-poor blood from the body enters the right atrium, then flows into the right ventricle, and finally gets pumped to the lungs to receive oxygen. On the other hand, oxygen-rich blood from the lungs enters the left atrium, then flows into the left ventricle, and is pumped out to the rest of the body.

However, in children with a single ventricle defect, there is only one functional ventricle instead of two. This means that the blood from both the body and the lungs mixes together, which can lead to various complications.

During the Fontan Procedure, the surgeon creates a new pathway for the blood to flow properly. They redirect the oxygen-poor blood directly from the body to the lungs, bypassing the heart. This is usually done by connecting the veins that bring the oxygen-poor blood from the body directly to the pulmonary arteries,



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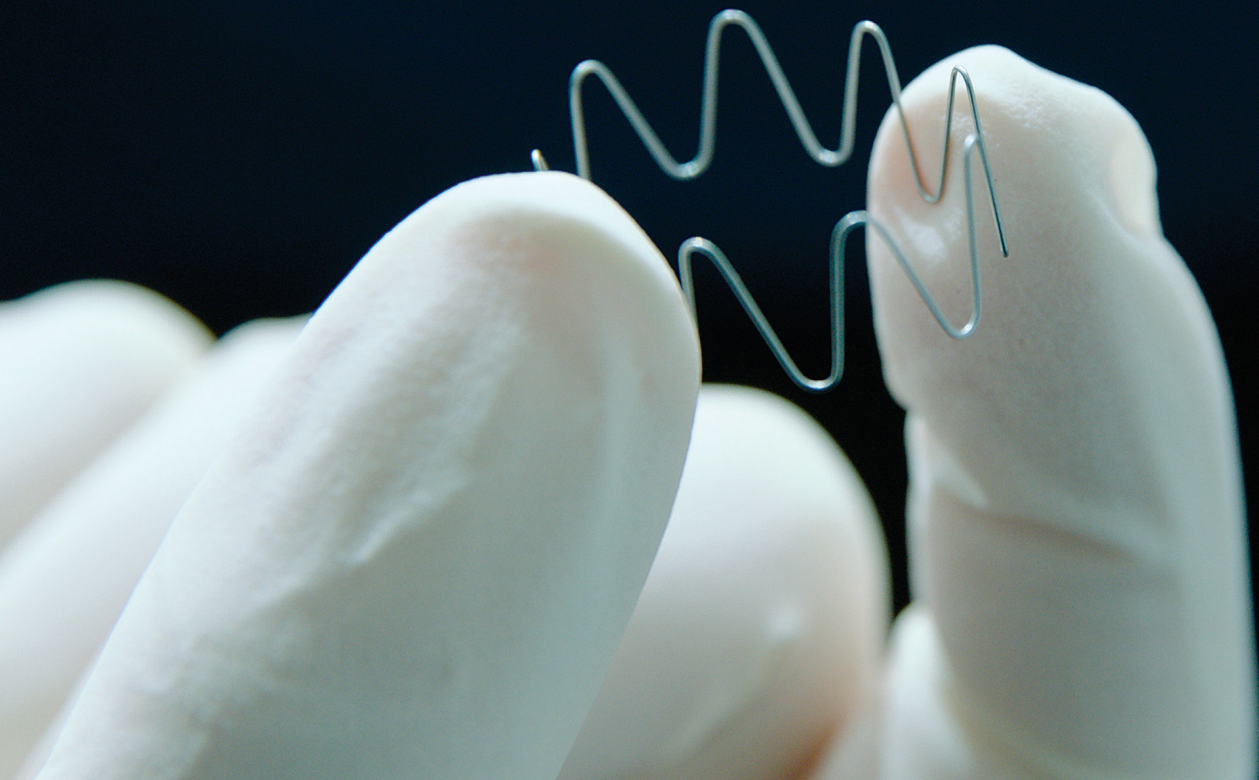
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The following are contraindications for the use of this device: active bacterial endocarditis or any other active infections, known intolerance to Nitinol (titanium or nickel), or an anticoagulation/antiplatelet regimen.

Warnings

General: Implantation of the Harmony TPV system should be performed only by physicians who have received Harmony TPV system training. The transcatheter pulmonary valve (TPV) is to be used only in conjunction with the Harmony delivery catheter system (DCS). This procedure should only be performed where emergency pulmonary valve surgery can be performed promptly. Do not use any of the Harmony TPV system components if any of the following has occurred: it has been dropped, damaged, or mishandled in any way, or if the use-by date has elapsed.

Transcatheter pulmonary valve (TPV): This device was designed for single use only. Do not reuse, reprocess, or resterilize the TPV. Reuse, reprocessing, or resterilization may compromise the structural integrity of the device and/or create a risk of contamination of the device, which could result in patient injury, illness, or death. Do not resterilize the TPV by any method. Exposure of the device and container to irradiation, steam, ethylene oxide, or other chemical sterilants renders the device unfit for use. The device is packaged with a temperature sensor. Do not freeze the device. Do not expose the device to extreme temperatures. Do not use the device if the arrow on the sensor points to the symbol that indicates that the temperature limit has been exceeded. Do not use the device if any of the following have occurred: the tamper-evident seal is broken, the serial number tag does not match the container label, the arrow on the sensor points to the symbol that indicates that the temperature limit has been exceeded, or the device is not completely covered by the storage solution. Do not contact any of the Harmony TPV system components with cotton or cotton swabs. Do not expose any of the Harmony TPV system components to organic solvents, such as alcohol. Do not introduce air into the catheter. Do not expose the device to solutions other than the storage and rinse solutions. Do not add or apply antibiotics to the device, the storage solution, or the rinse solution. Do not allow the device to dry. Maintain tissue moisture with irrigation or immersion. Do not attempt to repair a damaged device. Do not handle the valve leaflet tissue or use forceps to manipulate the valve leaflet tissue. Do not attempt to recapture the device once deployment has begun. Do not attempt to retrieve the TPV if any one of the outflow TPV struts is protruding from the capsule. If any one of the outflow TPV struts has deployed from the capsule, the TPV must be released from the catheter before the catheter can be withdrawn. Do not attempt post-implant balloon dilatation (PID) of the TPV during the procedure, which may cause damage to or failure of the TPV leading to injury to the patient resulting in reintervention.

Delivery catheter system (DCS): This device was designed for single use only. Do not reuse, reprocess, or resterilize the DCS. Reuse, reprocessing, or resterilization may compromise the structural integrity of the device and/or create a risk of contamination of the device, which could result in patient injury, illness, or death. Do not reuse or resterilize the DCS. If resistance is met, do not advance the guidewire, DCS, or any other component without first determining the cause and taking remedial action. Do not remove the guidewire from the DCS at any time during the procedure.

Precautions

General: Clinical long-term durability has not been established for the Harmony TPV. Evaluate the TPV performance as needed during patient follow-up. The safety and effectiveness of Harmony TPV implantation in patients with pre-existing prosthetic heart valve or prosthetic ring in any position has not been demonstrated. The Harmony TPV system has not been studied in female patients of child-bearing potential with positive pregnancy.

Before use: Exposure to glutaraldehyde may cause irritation of the skin, eyes, nose, and throat. Avoid prolonged or repeated exposure to the chemical vapor. Use only with adequate ventilation. If skin contact occurs, immediately flush the affected area with water (for a minimum of 15 minutes) and seek medical attention immediately. The TPV and the glutaraldehyde storage solution are sterile. The outside of the TPV container is nonsterile and must not be placed in the sterile field. The TPV and DCS should be used only in a sterile catheterization laboratory (cath lab) environment. Ensure that sterile technique is used at all times. Strictly follow the TPV rinsing procedure. For TPV 25: Ensure that all green sutures have been removed from the attachment suture loops on the TPV before loading onto the DCS. Prevent contamination of the TPV, its storage solution, and the DCS with glove

powder. Verify the orientation of the TPV before loading it onto the DCS. The inflow end of the TPV with attachment suture loops must be loaded first. Do not place excessive pressure on the TPV during loading. Inspect the sealed DCS packaging before opening. If the seal is broken or the packaging has been damaged, sterility cannot be assured. Proper functioning of the DCS depends on its integrity. Use caution when handling the DCS. Damage may result from kinking, stretching, or forceful wiping of the DCS. This DCS is not recommended to be used for pressure measurement or delivery of fluids. Carefully flush the DCS and maintain tight DCS connections to avoid the introduction of air bubbles.

During use: The TPV segment is rigid and may make navigation through vessels difficult. Do not advance any portion of the DCS under resistance. Identify the cause of resistance using fluoroscopy and take appropriate action to remedy the problem before continuing to advance the DCS. Careful management of the guidewire is recommended to avoid dislodgement of the TPV during DCS removal. Once deployment is initiated, retrieval of the TPV from the patient is not recommended. Retrieval of a partially deployed valve may cause mechanical failure of the delivery catheter system or may cause injury to the patient. Refer to the section below for a list of potential adverse events associated with Harmony TPV implantation. During deployment, the DCS can be advanced or withdrawn prior to the outflow struts protruding from the capsule. Once the TPV struts contact the anatomy during deployment, it is not recommended to reposition the device. Advancing the catheter forward once the TPV struts make contact with the anatomy may lead to an undesired deployment or may cause damage to or failure of the TPV and injury to the patient. Refer to the section below for a list of potential adverse events associated with the Harmony TPV implantation. Physicians should use judgment when considering repositioning of the TPV (for example, using a snare or forceps) once deployment is complete. Repositioning the bioprosthesis is not recommended, except in cases where imminent serious harm or death is possible (for example, occlusion of the main, left, or right pulmonary artery). Repositioning of a deployed valve may cause damage to or failure of the TPV and injury to the patient. Refer to the section below for a list of potential adverse events associated with the Harmony TPV implantation. Ensure the capsule is closed before DCS removal. If increased resistance is encountered when removing the DCS through the introducer sheath, do not force passage. Increased resistance may indicate a problem and forced passage may result in damage to the device and harm to the patient. If the cause of resistance cannot be determined or corrected, remove the DCS and introducer sheath as a single unit over the guidewire, and inspect the DCS and confirm that it is complete. If there is a risk of coronary artery compression, assess the risk and take the necessary precautions. Endocarditis is a potential adverse event associated with all bioprosthetic valves. Patients should make their healthcare providers aware that they have a bioprosthetic valve before any procedure. Post-procedure, administer appropriate antibiotic prophylaxis as needed for patients at risk for prosthetic valve infection and endocarditis. Prophylactic antibiotic therapy is recommended for patients receiving a TPV before undergoing dental procedures. Post-procedure, administer anticoagulation and/or antiplatelet therapy per physician/clinical judgment and/or institutional protocol. Excessive contrast media may cause renal failure. Preprocedure, measure the patient's creatinine level. During the procedure, monitor contrast media usage. Conduct the procedure under fluoroscopy. Fluoroscopic procedures are associated with the risk of radiation damage to the skin, which may be painful, disfiguring, and long term.

Potential Adverse Events

Potential risks associated with the implantation of the Harmony TPV may include, but are not limited to, the following: • death • valve dysfunction • tissue deterioration • hematoma • heart failure • cerebrovascular incident • perforation • rupture of the right ventricular outflow tract (RVOT) • compression of the aortic root • compression of the coronary arteries • sepsis • pseudoaneurysm • erosion • stent fracture • arrhythmias • device embolization or migration • pulmonary embolism • occlusion of a pulmonary artery • laceration or rupture of blood vessels • device misorientation or misplacement • valve deterioration • regurgitation through an incompetent valve • physical or chemical implant deterioration • paravalvular leak • valve dysfunction leading to hemodynamic compromise • residual or increasing transvalvular gradients • progressive stenosis and obstruction of the implant • hemorrhage • endocarditis • thromboembolism • thrombosis • thrombus • intrinsic and extrinsic calcification • bleeding • bleeding diathesis due to anticoagulant use • fever • pain at the catheterization site • allergic reaction to contrast agents • infection • progressive pulmonary hypertension • progressive neointimal thickening and peeling • leaflet thickening • hemolysis. General surgical risks applicable to transcatheter pulmonary valve implantation: • abnormal lab values (including electrolyte imbalance and elevated creatinine) • allergic reaction to antiplatelet agents, contrast medium, or anesthesia • exposure to radiation through fluoroscopy and angiography • permanent disability.

Please reference the Harmony TPV system instructions for use for more information regarding indications, warnings, precautions, and potential adverse events.

CAUTION: Federal law (USA) restricts these devices to the sale by or on the order of a physician.

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which carry the blood to the lungs. This allows the oxygen-rich blood from the lungs to flow back to the body without mixing with the oxygen-poor blood.

The Fontan Procedure is typically performed in stages, with the first surgery usually done in infancy, followed by additional procedures as the child grows. The goal is to improve the child's overall heart function and oxygen levels in the blood, therefore promoting healthy growth and development. It's important to keep in mind that each child's situation is unique, and the specific details of the Fontan Procedure may vary depending on the individual case. Your child's healthcare team will be able to provide you with more specific information tailored to your child's needs. I hope this explanation helps you understand the Fontan Procedure better! If you have any further questions or concerns, feel free to ask.

Subsequently, I asked ChatOn to help with the patient directly using the following prompt: *Explain the Fontan Procedure to a two-year-old patient.* Again, within a few seconds I received a response:

Hello there! I'm here to help you understand the Fontan Procedure. 😊

The Fontan Procedure is a type of heart surgery that is sometimes done for children with a single ventricle, which means they have only one working pumping chamber in their heart. This surgery is usually done when a child is around 2 to 3 years old, just like you!

During the Fontan Procedure, the doctors will create a new pathway for the blood to flow through your heart. They will do this by redirecting the blood from the lower part of your body, like your legs, to go directly to your lungs. This helps your heart work more efficiently.

To do this, the doctors will connect a tube called a conduit or a tunnel between the vein that carries blood from your lower body and the artery that takes blood to your lungs. This tube will act as a new pathway for the blood to flow.

After the surgery, your heart will be able to pump oxygen-rich blood to your body without having to go through the normal two-step process. This helps your heart work better, and it can improve your energy levels and overall health.

It's important to remember that the Fontan Procedure is a complex surgery, and it requires a lot of care and support from your doctors and loved ones. But many children who have this procedure go on to live happy and healthy lives!

I hope this explanation helps you understand the Fontan Procedure a little better.

If you have any more questions, feel free to ask! 😊

**Do you use AI in your practice?
Would you like to discuss
your methods in CCT?
Please contact Dr. Moore
jwmmoore1950@gmail.com**

The first response is quite reasonable and likely helpful in a general way. The second is ludicrous and inappropriate. Apparently, the AI does not "know" that a two-year-old cannot understand an "explanation" of the Fontan Procedure. This gaff highlights a present weakness of LLMs, and is a reason why these AIs can only be used as tools not substitutes for humans.

Finally, I used a different more age-appropriate prompt for the patient query: *How should I prepare a two-year-old for Fontan surgery?* I received a very reasonable response:

I'm not a doctor, but I can offer some general suggestions to help prepare your two-year-old for Fontan heart surgery. Remember to consult with your healthcare provider for specific advice tailored to your child's needs. Here are a few ideas:

1. *Maintain a positive atmosphere: Children are perceptive and can pick up on their caregivers' emotions. Try to create a calm and reassuring environment around your child to help them feel secure.*
2. *Age-appropriate explanations: Use simple, age-appropriate language to explain the upcoming surgery to your child. You can mention that the doctors will be working on their heart to make it better. Emphasize that the doctors and nurses are there to help and keep them safe.*
3. *Books and visual aids: Utilize picture books or other visual aids that explain medical procedures or hospitals in a child-friendly manner. These resources can help your child understand what to expect.*
4. *Play pretend: Engage in imaginative play with your child using dolls or stuffed animals. Show them how the dolls go through a pretend surgery, using gentle and positive language. This can help reduce anxiety and familiarize them with the process.*
5. *Maintain routines: Try to stick to your child's regular routines as much as possible leading up to the surgery. Consistency can help provide a sense of security during this uncertain time.*
6. *Comfort items: Allow your child to bring their favorite toy or comfort item with them to the hospital. Having something familiar nearby can provide a sense of comfort and familiarity.*



- 7. *Talk to the medical team: Reach out to the medical team involved in your child's care. They can provide you with more specific guidance on how to prepare your child for the surgery. They may also have resources or support services available for families in similar situations.*

Remember, every child is unique, so it's essential to tailor your approach to your child's individual needs. Providing love, support, and reassurance throughout the process can go a long way in helping your little one prepare for Fontan heart surgery.

From these examples, it's clear that the user has a significant challenge in employing GPT-4 as a tool. It is really a case of "Garbage in ... garbage out." Prompts must be thoughtfully crafted. The more specific and "appropriate" a prompt is, the better will be the response from the AI.

More later...

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JOHN MOORE, MD, MPH

Medical Editor
 Congenital Cardiology Today
 San Diego, CA, USA
jwmmoore1950@gmail.com



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Non-Invasive Pediatric Cardiologist

The **division of Pediatric Cardiology, Boston Children's Health Physicians (BCHP)**, affiliated with **New York Medical College** and **Maria Fareri Children's Hospital**, is seeking a board eligible / board certified pediatric cardiologist with expertise in non-invasive imaging (echocardiography: TTE, TEE and Fetal) for **Director of Non-Invasive Imaging**. In addition to imaging, the candidate will also be able to see general cardiology out-patients. A faculty appointment and rank with NYMC will be determined by previous experience.

Pediatric Electrophysiologist

The **division of Pediatric Cardiology, Boston Children's Health Physicians (BCHP)**, affiliated with **New York Medical College** and **Maria Fareri Children's Hospital**, is seeking a board eligible/ board certified pediatric cardiologist as **Director of Pediatric Electrophysiology**. This person should have experience in arrhythmia management and invasive EP including catheter ablations, device placement and interrogations. In addition to electrophysiology patients, the candidate will also be able to see general cardiology out-patients. A faculty appointment and rank with NYMC will be determined by previous experience.

Boston Children's Health Physicians, a diverse, **multispecialty pediatric group practice** of over 250 physicians, collaborates with **Westchester Medical Center** to provide a predominance of the pediatric medical services at **Maria Fareri Children's Hospital** and has done so for many years. These specialty services include Adolescent Medicine, Cardiology, Critical Care, Developmental Pediatrics, Endocrinology, Gastroenterology, Hematology Oncology, Hospitalist, Infectious Diseases, Pulmonology, Allergy & Immunology, Sleep Medicine, Neonatology, Nephrology, Neurology, and Rheumatology. Maria Fareri Children's Hospital is the only children's hospital in the lower Hudson Valley, offering state-of-the-art tertiary and quaternary care in a truly family-centered environment. BCHP also includes a network of 33 pediatric primary care practices serving the Hudson Valley region of NY and Fairfield County, Connecticut.

To apply, please contact:

Robert Vincent, MD, CM

Chief, Pediatric Cardiology
 Boston Children's Health Physicians &
 Maria Fareri Children's Hospital
 Professor of Pediatrics NYMC

Robert_Vincent@bchphysicians.org or 404.694.1696

Boston Children's Health Physicians is committed to excellence through diversity and inclusion and welcomes candidates of all backgrounds.

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The Heart Institute at UPMC Children's Hospital of Pittsburgh, one of the premier pediatric cardiology programs in the country, is currently recruiting for an outstanding leader for the position as the Director of Perinatal Cardiology, as well as two excellent candidates for the faculty positions of non-invasive cardiac imager with emphasis on fetal cardiac imaging, and an inpatient cardiac care (acute care).

The Heart Institute provides comprehensive pediatric cardiology services including CT surgery, interventional cardiology, cardiac intensive care, electrophysiology, advanced imaging (MRI/CT), heart failure, transplant, pulmonary hypertension, adult congenital, fetal, and preventative cardiology programs, among others. Our program serves pediatric and adult congenital heart patients within central and western Pennsylvania, surrounding states, as well as national and international locations. Our group consists of 33 pediatric cardiologists, 5 pediatric cardiothoracic surgeons, 8 pediatric cardiac intensivists and 9 cardiology fellows along with 19 physician extenders and a staff of over 100. We are honored to be ranked **#3 nationally** and **#1 in Pennsylvania** for pediatric cardiology and heart surgery by U.S. News and World Report. Our Cardiothoracic Surgery Program, led by Dr. Victor Morell, is one of the top programs in the country, having held a 3-star rating from Society of Thoracic Surgery (STS) consistently over many years. UPMC is a nationally ranked medical center that serves as the regional referral center for multiple specialties providing a growing collaborative environment for quality care.

DIRECTOR OF PERINATAL CARDIOLOGY

- We are seeking a motivated and experienced individual to serve as the **Director of Perinatal Cardiology**. The current program is part of our non-invasive imaging section, led by Dr. Laura Olivieri. Over 1,500 fetal studies per year at our main Children's Hospital of Pittsburgh campus and affiliated sites. We currently have 4 fetal outreach locations throughout Western, PA. Our Perinatal Program collaborates closely with the UPMC Magee-Womens Hospital, which is the regional referral center for OBGYN patients, performing approximately 11,000 deliveries per year, with an active inpatient and outpatient program. The development of outreach fetal screening opportunities with a growing neonatal/MFM network will be a key component of this effort. Magee-Womens Research Institute & Foundation is an independent research institute and one of the largest in the nation that focuses on reproductive biology, and women's and infants' health. Since its inception in 1992, MWRI has been a leader in funding from the NIH and other sources. Opportunities are available to work with members of the MWRI on specific research projects.
- As a member of the division of pediatric cardiology and core imaging faculty, the Director of Perinatal Cardiology will also provide direct inpatient and outpatient care, read transthoracic and perform transesophageal echocardiograms. Additionally, this individual will participate in fellow, resident, and medical student teaching and have a demonstrated commitment to academic and clinical excellence in pediatric cardiology. Preference will be given to candidates with more than 5 years of post-fellowship cardiology experience, experience with developing a fetal cardiology program, and those with an interest and track record for academic success in fetal medicine.

This position comes with a competitive salary and faculty appointment commensurate with experience and qualifications at the University of Pittsburgh School of Medicine. The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer. Interested individuals should forward a letter of intent curriculum vitae, and three letters of reference. Informal inquiries are also encouraged.

Contact information:

Jacqueline Kreutzer, MD, FSCAI, FACC
Chief, Division of Cardiology
UPMC Children's Hospital of Pittsburgh
4401 Penn Avenue
Pittsburgh, PA 15224
Telephone: 412-692-6903
E-mail: Jacqueline.kreutzer@chp.edu



Journal of Pediatric Cardiology and PICS Launch a Special PICS Collection on PDA Stenting

Karim Diab, MD; Mazeni Alwi, MD; Howaida El-Said, MD

After discussions between the PICS directors, the Editor-in-Chief of Pediatric Cardiology, Springer Nature, is launching a series of PICS collections focusing on particular interventional topics in the field of Pediatric Cardiology. The aim for such collections is to provide a constellation of articles on a particular hot topic in pediatric interventional cardiology and allow researchers focusing on a particular topic to gain higher visibility. As such, **Pediatric Cardiology and PICS** have embarked on opening the first **PICS Collection** named **"PDA Stenting: Past, Present and Future."** We are pleased to announce that Dr. Alwi and Dr. El-Said are the invited guest editors for this special PICS Collection!

PDA stenting can be done for both systemic and pulmonary ductal-dependent lesions. In the recent past, there has been significant focus on PDA stenting in the setting of pulmonary dependent circulation. The modified Blalock Taussig shunt (mBTS) has been the mainstay of palliation of lesions with ductal-dependent pulmonary blood flow (DD-PBF). However, even in the current era, this has been associated with post-operative instability and 30-day mortality in excess of other more technically complex neonatal operations. This has been partly attributed to a case-mix that includes more complex lesions or severely ill neonates, leading to a drive toward alternative approaches in the palliation of these neonates.

In the last decade, ductal stenting (DS) has gained wider acceptance as an alternative to mBTS. In recent publications, multicenter collaborative efforts that compared the outcomes of BTS with DS – though retrospective in nature – have validated some of the merits of DS observed in preceding single-center case series.

With our shared accumulated experience, we are seeing some degree of standardization of the PDA stenting procedure e.g. the role of pre-procedure advanced imaging, choice of vascular access, techniques and materials, post-procedure management and interstage follow-up. It is still too early, however, to say that we are at the cusp of a new era where DS will soon supplant mBT as the palliation procedure of choice. There are procedural complications that are unique to DS, and durability of palliation is a concern, although earlier definitive surgical repair has become the norm for the majority of complex cyanotic CHD. Publications on surgical experience with repairing lesions that had been palliated with DS is still a trickle. In addition, DS remains a procedure that relies fundamentally on materials borrowed from the coronary interventional world. There are certain aspects of complex PDA morphology in neonates with DD-PBF that may be better served by stents that are specifically designed for this purpose.

The Journal of Pediatric Cardiology and PICS invite experts and researchers in the field to submit original research, review article and perspectives on the topic of PDA stenting, specifically focusing on areas such as advanced imaging, procedural techniques, post-

procedure care and follow-up, and surgery post DS, long term results, new stent development and work related to this subject. We particularly encourage original research papers that present new scientific findings and outcomes, as well as review papers that provide a comprehensive overview of the current state-of-art and future directions on this topic. For review papers, we encourage authors to critically evaluate and synthesize existing research, identify key gaps in knowledge or limitations in current practices, and propose innovative ideas or new directions for future research on this topic.

All submitted papers should follow the author guidelines provided on the Pediatric Cardiology journal website. During the submission, you will be asked if you are submitting your manuscript to a PICS Collection. At this time, submissions for this Collection will be open till September 2024.

General Benefits for Authors Submitting Papers to Pediatric Cardiology PICS Collections

Submitting papers to a PICS collection in Pediatric Cardiology follows the same steps as submitting a regular manuscript except specifying to submit it to a particular PICS collection during the process if the manuscript is pertinent to the topic. This has several potential benefits to the authors including:

1. Articles under a common theme gain higher visibility as researchers interested in this theme can more easily find the latest publications related to this.
2. All articles published in a collection will receive a tag on the online version of the article highlighting "This article is part of a collection" and linking to the specific collection page.
3. Authors can see a dedicated space for their manuscript to a specific topic.
4. Compared to a special issue, collection articles will be assigned to the collection right after online publication of the article (compared to special issues, there is no delay!)
5. Collections open for submissions are promoted on the journal homepage.
6. Upon acceptance, the article is published online first and also assigned to a collection at the same time. The Editor-in-Chief later decides to assign the article to an upcoming regular issue or to make a collection of articles as a special issue.
7. This gives an opportunity to promote and support young researchers in their scientific career as authors.
8. This possibility also provides additional opportunities for speakers/researchers at annual PICS conferences to have their original work presented.



The Congenital Heart Collaborative

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Rainbow Babies & Children's
Nationwide Children's Hospital

General Pediatric Cardiologist

The Congenital Heart Collaborative (TCHC), an affiliation between University Hospitals Rainbow Babies & Children's Hospital (Cleveland OH) and Nationwide Children's Hospital (NCH, Columbus OH) heart programs, seeks candidates in **Pediatric Cardiology** for a faculty position in our expanding group at UH Rainbow Babies & Children's Hospital. The successful candidate will join a group of physicians that model teamwork, collaboration and dedication to their patients and partners and be a part of an innovative clinical and educational program, representing the section in the community, nationally, and internationally. The Section consists of nine board-certified pediatric cardiologists including interventionalists, electrophysiologist, advanced imaging cardiologists, fetal cardiologists, general cardiologist, and 2 cardiovascular surgeons. This position is to replace a vacancy created by a relocating faculty member. The candidate will have opportunities to participate in quality improvement initiatives, clinical research, education of medical students, residents, and fellows and clinical time devoted to imaging, outpatient and inpatient care, including outreach clinic sessions.

Qualified applicants must have an MD, DO or MD/PhD degree, be BE/BC in Pediatric Cardiology. The rank and appointment will be commensurate with the candidate's credentials and experience.

The successful candidate will be well-supported at a world-class children's hospital that has over 60 years of experience in the care of pediatric and ACHD patients; an outstanding educational and research enterprise at Case Western Reserve University School of Medicine, and an internationally recognized program partner with the NCH Heart Center. TCHC is a dedicated service line with a common executive administration and functions as one program on two campuses with the commitment to expand access to high-quality comprehensive cardiac care along with a scholarly and educational mission. TCHC provides excellent cardiothoracic surgical, interventional, electrophysiologic, and non-invasive services.

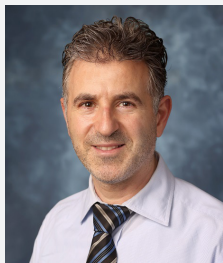
Please send letter and curriculum vitae to **Harinder Singh, MD**, Section Chief, Pediatric Cardiology at Rainbow Babies & Children's Hospital, harinder.singh@uhhospitals.org. In employment, as in education, Case Western Reserve University is committed to equal opportunity and diversity. Women, veterans, members of underrepresented minority groups and individuals with disabilities are encouraged to apply.

Among the nation's leading academic medical centers, University Hospitals Case Medical Center is the primary affiliate of Case Western Reserve University School of Medicine, a nationally recognized leader in medical research and education.



For more information on the PICS Collection on PDA Stenting please check the journal's website, visit:

<https://link.springer.com/collections/ajfdjggib>



KARIM A. DIAB, MD, FACC, FASE

*Director, Fetal Heart Program
Lurie Children's Hospital
Associate Professor of Pediatrics
Northwestern Feinberg School of Medicine
Editor-In-Chief, Pediatric Cardiology, Springer
Chicago, IL, USA
karimdiab@gmail.com*



MAZENI ALWI, MD, FPICS

*Department of Paediatric Cardiology
Institut Jantung Negara
(National Heart Institute)
Kuala Lumpur, Malaysia*



HOWAIDA EL-SAID, MD, PHD

*Professor Pediatric Cardiology
University of California San Diego
Director of Cardiac Cath Lab
Rady Children's Hospital
Adult Congenital Heart Disease Certified
San Diego, CA, USA*



Announcing the PICS Early Career Development Academy

OVERVIEW OF THE ACADEMY

The PICS Early Career Development Academy will advance professional development of early career pediatric/congenital interventional cardiologists globally. The Academy is an innovative global two-year program blending mentor supervision and team-based learning. This new program meets a need expressed by training directors for such a program following completion of formal training programs (or equivalent according to local training pathways and board committee evaluation).

WHO SHOULD APPLY?

If you trained as a pediatric/congenital interventional cardiologist and completed formal training within the past 5 years, this program has been designed for you.

HOW IS THE ACADEMY STRUCTURED?

- Hybrid program: online & in-person
- Didactic instruction plus team activities
- 25 early career physicians to be selected
- 70 faculty from centers worldwide
- 5 teams: 5 participants and 1 mentor per team. Participants from around the globe
- Program Directors: Drs. Gianfranco Butera & Aimee Armstrong
- Each team will be assigned a 2-year research project
- Mentors: Drs. Lee Benson, Mario Carminati, John Cheatham, Ziyad Hijazi, & Sir Shakeel Qureshi
- Two challenges: interim review paper & final case presentation
- Winning team declared at end; recognition of all participating early career physicians

Didactic content will cover clinical topics, resilience during difficult situations, team building, medical reasoning, research methodology, industry relationships and much more.

APPLY TODAY: at CHDinterventions.org or email, info@CHDinterventions.org



PICS Society

PICS Society | 3D IMAGING I3

SAVE THE DATE
SAN DIEGO
MARRIOTT MARQUIS - SAN DIEGO MARINA
SEPTEMBER 4-7, 2024



Mary Jane Eazer Elected to Adult Congenital Heart Association (ACHA) Board of Directors

Winter Garden, FL and Media, PA – The Adult Congenital Heart Association (ACHA) - whose mission is to empower the Congenital Heart Disease (CHD) community by advancing access to resources and specialized care that improve patient-centered outcomes – has appointed Mary Jane Eazer to its Board of Directors.



Diagnosed in one in 100 births, CHD is the most common birth defect and a chronic illness that includes a range of simple, moderate, and complex heart defects that need to be monitored throughout a patient's life. ACHA serves and supports nearly two million adults with congenital heart disease - along with their families and the medical community - with education, outreach, advocacy, and research.

Eazer spent more than 25 years as a sales and marketing leader in the medical device industry, most recently as U.S. Director for Congenital Therapies at Medtronic.

"Throughout my career, I saw firsthand the challenges of keeping CHD patients in specialized care as they get older," Eazer said. "It is critically important to raise awareness among this population and bring them back to care, a mission I will carry forward in my role with ACHA."

"Mary Jane's professional experience brings a unique perspective to our Board, as she has a deep understanding of the complexities around

getting patients on, or back on, a specialized care pathway," said ACHA President and CEO Mark Roeder. "Having engaged with cardiologists and other medical professionals in the field, she understands the need for a hyper-local and national approach to educating patients, so they get the care they need and deserve."

As a member of the Board of Directors, Eazer joins a dedicated group of professionals, who oversee the organization's leadership and strategies in an effort to advance ACHA's mission and advocate for people living with CHD.

"ACHA has a direct, positive impact on people's lives, including my niece who is an adult living with congenital heart disease," Eazer concluded, "so my commitment to this cause is very personal. I look forward to putting my knowledge and experience to work."

For more information about ACHA, contact (888) 921-ACHA or visit www.achaheart.org.



**Nicklaus
Children's
Hospital**

Heart Institute

Exceptional Pediatric CICU Medical Director Opportunity with Nationally Ranked Heart Institute in Miami

Nicklaus Children's Hospital, a 309-bed freestanding children's hospital and ACS-verified Level 1 pediatric trauma center, and Nicklaus Children's Pediatric Specialists, the physician multispecialty group practice of Nicklaus Children's Health System, have an exceptional opportunity for a board-certified dual fellowship-trained (Pediatric Critical Care and Pediatric Cardiology) pediatric cardiac intensivist to serve as medical director of the CICU.

The medical director of the Nicklaus Children's Hospital Heart Institute's CICU is responsible for setting the strategy for the CICU, as well as overseeing all clinical care, quality metrics, teaching, research and fiscal planning in collaboration with Nicklaus Heart Institute leadership.

Nicklaus Children's Hospital is an affiliate of the Florida International University Herbert Wertheim College of Medicine. Our state-of-the-art Advanced Care Pavilion houses a 34-bed cardiac in-patient unit with an adjustable acuity model that allows all rooms to accommodate critically ill patients with heart disease. The Heart Institute offers a full range of services, including the management of patients following the entire spectrum of congenital heart surgery, interventional catheterization and invasive electrophysiology. Our cardiac surgical program is one of the most transparent in the world and the first to offer real-time outcomes reporting (<https://rto.nicklauschildrens.org>).

Competitive compensation and benefits package.

Qualified candidates please contact:

Joyce Berger

Physician Recruiter

Joyce.Berger@nicklaushealth.org

786.624.3510

NicklausChildrens.org/NCPS

DFW



General Pediatric Cardiologist in the Sunshine State!

Pediatric Cardiology Associates, a Pediatrix Medical Group practice, located in Tampa Bay on Florida's Gulf Coast, is seeking a board-certified or board-eligible General Pediatric Cardiologist.

Primary Responsibilities

- Covering the various general pediatric cardiology outpatient clinics in the Tampa Bay area
- Inpatient visits and TEEs in the pediatric cardiac OR for approximately one week out of every 4-6 weeks

Practice Details

- Large, experienced, well-established team of 14 pediatric cardiologists and 3 NPs with 9 offices and clinics located throughout the Tampa/St. Petersburg area
- Offer comprehensive congenital cardiac care from fetal life through adulthood
- The team includes members of all pediatric cardiology sub-specialties including: fetal, advanced imaging (CT, MRI, 3D echo), intervention, electrophysiology, cardiomyopathy/heart failure, preventive, and adult congenital cardiology
- The interventional team performs over 400 catheterizations per year, about 60% of which are interventions
- Recent interventional team accomplishments include:
 - Implanting their 250th transcatheter pulmonary valve, Spring 2023
 - First program in Tampa Bay and second in Florida to implant Alterra adaptive pre-stent and Sapien valve, Summer 2022
 - First program in Florida to implant Harmony valve, Fall 2021
 - PDA stenting largely replaced surgical shunt placement in Spring 2020 for neonates with diminished pulmonary blood flow
 - First program in Florida to implant the Gore Cardioform ASD Occluder, Fall 2019
 - First program in Tampa Bay to offer PDA device closure for premature newborns, first implant, Winter 2016
- Sub-specialty clinics include general pediatric cardiology, interventional, fetal, pulmonary hypertension, cardiomyopathy, ACHD, electrophysiology, and preventive cardiology
- Our ACHD program is the ONLY certified Adult Congenital Heart Association program in north and central Florida
- This position also offers 24/7 collaboration with our excellent pediatric cardiac surgical and pediatric cardiac intensive care teams at St Joseph's Children's Hospital
- Our center offers a unique depth of hospital infrastructure:
 - Two state of the art 1000+ square foot hybrid capable catheterization labs/ORs (one biplane, one single plane)
 - Two additional biplane catheterization labs
 - Two EP labs
 - Dedicated congenital cardiac OR
 - Comprehensive pediatric cardiac intensive care unit with in-house 24-hour cardiac intensivist coverage
- We have the added benefits of a children's hospital inside a large tertiary adult hospital, which is attached to a dedicated women's hospital. The women's hospital includes a Level IV NICU. This simplifies care across all patient ages with easy access to consultants from all pediatric and adult specialties
- Pediatrix, as a national pediatric cardiology group with over 125 pediatric cardiologists, provides opportunities for quality initiatives that can have national impact
- We offer an attractive schedule allowing freedom to enjoy a great quality of life
- Generous compensation and benefits package offered

About the Area

Tampa Bay's warm weather affords plenty of opportunities to relish the great outdoors year round. You will live in a region others only get to enjoy on vacation. Golf at one of nearly 100 courses or relax on one of the many pristine white-sand beaches. The area offers an assortment of family venues such as zoos, aquariums, theme parks, and state parks. Additionally Tampa Bay offers access to world-class museums, professional sporting events and the performing arts. There is a wide range of residential choices to fit every budget and lifestyle – whether you are looking for big city downtown living, golf course communities, waterfront lifestyle, majestic horse farms or historic neighborhoods. There is no state income tax.

Qualifications

- Ideally seeking candidates with TEE and cardiac ICU experience and at least 3 years of experience post-fellowship
- BC/BE in Pediatric Cardiology

Benefits and Compensation

- Health Insurance including prescription drugs
- Dental Insurance
- Vision Insurance
- Life Insurance
- Short- and Long-Term disability options
- Employee stock purchase program – 15% discount*
- 401k with company match**
- Long Term Care (LTC)
- Pre-tax Health Savings Account (HSA)
- Pre-tax Flexible Spending Accounts (FSA)
- Aflac Hospital, Critical Illness and Accident plans
- Identity Protection
- Employee Assistance Program (EAP)

*Part Time Regular employee classifications also receive this benefit

** Available to part-time regular and part-time casual employees age 21 and over

About Us

Pediatrix® Medical Group, Inc. (Pediatrix) is the nation's leading provider of physician services. Pediatrix-affiliated clinicians are committed to providing coordinated, compassionate and clinically excellent services to women, babies and children across the continuum of care, both in hospital settings and office-based practices. Specialties include obstetrics, maternal-fetal medicine and neonatology complemented by more than 20 pediatric subspecialties, as well as pediatric primary and urgent care clinics. The group's high-quality, evidence-based care is bolstered by significant investments in research, education, quality-improvement and safety initiatives. The physician-led company was founded in 1979 as a single neonatology practice and today provides its highly specialized and often critical care services through more than 5,000 affiliated physicians and other clinicians in 37 states. *Please Note: Fraudulent job postings/job scams are becoming increasingly common. All genuine Pediatrix job postings can be found through the Pediatrix Careers site: www.pediatrix.com/careers.*

Pediatrix is an Equal Opportunity Employer

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.



Arterial Stiffness May Cause and Worsen Heart Damage Among Adolescents by Increasing Blood Pressure and Insulin Resistance

Arterial stiffness is a novel cause of premature heart damage among adolescents, according to a new follow-up study. The study was conducted in collaboration between Texas Children's Hospital and Baylor College of Medicine in the US, the University of Bristol in the UK, the University of Exeter in the UK, and the University of Eastern Finland, and the results were published in Atherosclerosis.

Left ventricular hypertrophy and left diastolic dysfunction are measures of structural and functional heart damage, which have been associated with an increased risk of cardiovascular-related death in adults. These cardiac measures are also used in the paediatric population as indicators of premature heart damage.

Arterial stiffness estimated from carotid-femoral pulse wave velocity has been discovered as a novel cause of increased blood pressure, insulin resistance, and metabolic syndrome in adolescents and young adults. It was also recently shown that increased blood pressure in adolescence may cause premature heart damage, but it is not known whether arterial stiffness could independently cause structural and functional damage to the heart.

The current study was conducted among 1,856 adolescents of whom 1,011 were female. The adolescents were 17 years old at baseline, and they were followed up for seven years until young adulthood at age 24 years. Arterial stiffness, carotid intima-media thickness, and evidence of heart damage were assessed at baseline and follow-up. Signs of heart structure damage are left ventricular hypertrophy and high relative wall thickness, whereas signs of heart function damage are left ventricular diastolic dysfunction and increased left ventricular filling pressure.

During the 7-year follow-up period, the prevalence of heart structural damage among adolescents doubled. With extensive control for: fat mass, muscle mass, glucose, insulin, blood pressure, lipids, smoking status, sedentary time, physical activity, socio-economic status, and family history of cardiovascular disease, and using adults' cut points for diagnosing heart damage, it was observed that adolescents in the highest tertile category of arterial stiffness and carotid intima-media thickness had a 23 – 27% increased risk of progressively worsening structural heart damage. Only arterial stiffness appears to independently cause both structural and functional heart damage, whereas increased carotid wall thickness does not seem

to have a causal role. Increased carotid wall thickness is an early indicator of atherosclerosis, whereas increased arterial stiffness describes arteriosclerosis. The study further reported that arterial stiffness caused heart damage by increasing blood pressure and insulin resistance. The increase in blood pressure explained 34% of the heart damage caused by arterial stiffness. Moreover, insulin resistance explained 15% of the heart damage caused by arterial stiffness.

"We are seeing for the first time that arterial stiffness is a novel cause of several diseases such as: hypertension, insulin resistance, metabolic syndrome, and heart damage in the young population. Among adults, arterial stiffness is currently being established as a cause of type 2 diabetes. We discovered that approximately 50% of the deleterious role of arterial stiffness in causing heart damage is enhanced by the mechanism of increased blood pressure and insulin resistance. Thus, preventing and lowering blood pressure and insulin resistance may potentially diminish the negative impact of arterial stiffness on the heart, by up to half," says **Andrew Agbaje**, a physician and clinical epidemiologist at the University of Eastern Finland.

"Experimental and clinical intervention studies are urgently needed on comprehensive approaches to treating and reversing arterial stiffness from adolescence. At least, targeting blood pressure and insulin resistance leaves the problem half-solved," Agbaje continues.

Dr Agbaje's research group (urFIT-child) is supported by research grants from Jenny and Antti Wihuri Foundation, the Finnish Cultural Foundation Central Fund, the Finnish Cultural Foundation North Savo Regional Fund, the Orion Research Foundation, the Aarne Koskelo Foundation, the Antti and Tyyne Soininen Foundation, the Paulo Foundation, the Yrjö Jahnnson Foundation, the Paavo Nurmi Foundation, the Finnish Foundation for Cardiovascular Research, Ida Montin Foundation, Eino Räsänen Fund, Matti and Vappu Maukonen Fund, and the Foundation for Pediatric Research.



Andrew Agbaje, MD, MPH

For further information, please contact:

ANDREW AGBAJE, MD, MPH

Cert. Clinical Research (Harvard), Principal Investigator (urFIT-child)

Institute of Public Health and Clinical Nutrition, School of Medicine, University of Eastern Finland Kuopio, Finland

andrew.agbaje@uef.fi
+358 46 896 5633

Honorary Research Fellow, Children's Health and Exercise Research Centre, Public Health and Sports Sciences Department, Faculty of Health and Life Sciences, University of Exeter Exeter, UK

a.agbaje@exeter.ac.uk
<https://uefconnect.uef.fi/en/person/andrew.agbaje/>

Link to the Article

Agbaje AO, Zachariah JP, Tuomainen TP. Arterial Stiffness but not Carotid Intima-Media Thickness Progression Precede Premature Structural and Functional Cardiac Damage in Youth: A 7-Year Temporal and Mediation Longitudinal Study. *Atherosclerosis* August 3, 2023. <https://doi.org/10.1016/j.atherosclerosis.2023.117197>

urFIT-CHILD Research Group

<https://news.cision.com/university-of-eastern-finland/r/arterial-stiffness-may-cause-and-worsen-heart-damage-among-adolescents-by-increasing-blood-pressure-,c3817741>





Rady Children’s Appoints Adel Younoszai, MD, as Rady Children’s Hospital Co-Director of the Heart Institute, and Division Chief of Cardiology, Department of Pediatrics, UC San Diego

SAN DIEGO, Calif. — Rady Children’s Hospital-San Diego, the largest children’s hospital on the West Coast and one of the nation’s top pediatric health care systems, and the University of California, San Diego (UCSD) are pleased to announce that Adel Younoszai, MD, has been appointed as Rady Children’s Hospital Co-Director of the Heart Institute, and Division Chief of Cardiology, Department of Pediatrics, UC San Diego. Dr. Younoszai will spearhead the evolution of the cardiology department by embracing the technological advancements to empower providers to deliver faster, more effective care and improve outcomes.

With more than 20 years of experience in pediatric cardiology, Dr. Adel Younoszai has created both wellness and neuro-developmental support programs – staffed by psychologists, neuro-developmental psychologists, and child life therapists – for children born with heart problems. His 12 years as a volunteer doctor at a camp for children with chronic and life-threatening heart disease strengthens his track record of treating severe forms of pediatric congenital heart disease. He takes a holistic approach to treating his patients by supporting wellness in the children and families.

“As a pediatric cardiologist by training, I’ve known about Dr. Younoszai and his excellent reputation for years,” said Patrick Frias, MD, President & CEO of Rady Children’s. “His accomplishments in clinical care, research and in leadership roles are truly impressive and we’re so fortunate to have him join Rady Children’s and UC San Diego.”

Prior to his appointment, Dr. Younoszai was the Professor of Pediatric Cardiology and Associate Dean of Clinical Affairs, Child Health at the University of Colorado School of Medicine, which allowed him the experience and insights into high level organizational alignment.



Adel Younoszai, MD

“Dr. Adel Younoszai will be a phenomenal help to our institution by developing a great outreach program in cardiology and cardiac surgery,” said Gabriel G. Haddad, MD, Distinguished Professor of Pediatrics and Neurosciences Chairman, Department of Pediatrics, University of California San Diego. “He will be a great Cardiology Chief for our institution, and he joins us at the right time. He is an expert in Echocardiography and a great teacher for medical students, residents and fellows.”

Dr. Younoszai obtained his medical degree from the University of Iowa, College of Medicine, Iowa City. He completed his Master’s in Healthcare Management from Harvard University’s T.H. Chan School of Public Health.



NEONATOLOGY TODAY

Peer Reviewed Research, News and Information in Neonatal and Perinatal Medicine



Pediatric Heart Failure / Transplant Cardiologist

SUMMARY

Children's Minnesota is seeking a dynamic, fellowship-trained pediatric heart transplant cardiologist to join the Heart Failure Heart transplant (HFHT) program. This physician would have the benefit of collaborating with a comprehensive multidisciplinary transplant team that includes: 3 surgeons, 1 cardiologist, 2 nurse practitioners, transplant coordinators, dietitians, pharmacists, therapists and social workers. The HFHT program also offers a Ventricular Assist Device program, as well as a well-established ECMO program.

Annually, the Children's CV team see more than 16,000 patients and surgeons perform over 400 surgical interventions and 400+ catheterization procedures. The CHC's state-of-the-art facilities include a dedicated pediatric cardiovascular intensive care unit, one of 30 approved pediatric cardiac catheterization laboratories in North America for transcatheter pulmonary valve placement, and a complete pediatric arrhythmia service including the latest technology for ablation and devices. Our program includes a collaborative fetal team for diagnosing and managing congenital heart disease in-utero, a collaborative adult congenital cardiology program, an ICAEL-accredited echocardiography lab and a congenital cardiac MRI/CT program.

PRACTICE HIGHLIGHTS

- The Physician will provide professional heart failure and transplant related services to Children's Minnesota patients. This will include clinic, outreach, as well as inpatient service time.
- Physician shall participate in transplant team call pool.
- Opportunity for partner within the Children's Heart Clinic.
- The Cardiovascular Collaborative with Mayo Clinic to include research, education, and faculty appointment.

REQUIREMENTS

- Board Certified in Pediatric Cardiology from the American Board of Pediatrics
- Advanced Heart Failure/Transplant fellowship training in a program certified by the American Board of Pediatrics.
- Physicians should have clinical competency and expertise in caring for patients who are candidates for or are recipients of advanced heart failure therapies including mechanical circulatory devices.
- Must have an M.D., D.O. with ability to obtain a current Minnesota Medical License.
- Ability to be successfully credentialed by both Hospital and 3rd Party Payers

BENEFITS

- Generous salary and benefit package
- Malpractice provided
- Ample time off for PTO/CME/medical missions

ABOUT US

Mayo Clinic – Children's Minnesota Cardiovascular Collaborative, is one of the largest and strongest pediatric cardiovascular collaborations in the country. The Mayo Clinic-Children's Minnesota Cardiovascular Collaborative shares resources and clinical talent to provide the highest quality pediatric cardiology and cardiovascular surgery services as well as an integrated approach to pediatric research and education.

Children's Minnesota is one system serving kids throughout the Upper Midwest at 2 free-standing hospitals, primary care clinics, multiple specialty clinics and rehabilitation sites. We are a Level I pediatric trauma center offering a full spectrum of pediatric services, with over 14,000 admissions a year, over 90,000 emergency department visits, 18,000 surgeries, and greater than 200,000 outpatient visits. Children's Minnesota champions the health needs of children and families and aspires to be every family's essential partner in raising healthier children. Our values reflect the behaviors that are truly important to us as an organization: Kids First; Listen, Really Listen; Own Outcomes; Join Together and Be Remarkable.

APPLY

Interested applicants should submit a curriculum vitae and letter of interest to:

Melissa Coulson, *Manager of Physician Recruitment*

Melissa.Coulson@childrensmn.org



HeartSciences Signs Definitive Agreements with the Icahn School of Medicine at Mount Sinai to Commercialize Artificial Intelligence Cardiovascular Algorithms

Southlake, TX (GLOBE NEWSWIRE) -- Heart Test Laboratories, Inc. d/b/a HeartSciences (Nasdaq: HSCS; HSCSW) ("HeartSciences" or the "Company"), an AI-powered medical technology company focused on transforming ECGs/EKGs to save lives through earlier detection of heart disease, today announced it has executed definitive agreements with the Icahn School of Medicine at Mount Sinai (Icahn Mount Sinai), in New York, NY, to commercialize electrocardiographic AI algorithms and assets, as well as a memorandum of understanding for on-going cooperation, collaboration and de-identified data access.

Icahn Mount Sinai has invested in the curation of tens of millions of ECG records, enabling its leading researchers to develop a range of disease detection algorithms and state-of-the art AI foundational methods for use with ECG waveforms. HeartSciences has entered into licenses covering rights to a variety of Icahn Mount Sinai's AI algorithms, technologies and patent filings for the screening and diagnosis of cardiovascular disease.

HeartSciences and Icahn Mount Sinai have also entered into a memorandum of understanding for ongoing cooperation encompassing de-identified data access, on-going research, and the evaluation of HeartSciences' MyoVista® wavECGTM.

"We are thrilled to announce this agreement with Icahn Mount Sinai and look forward to working with one of the top-ranked hospitals for cardiology in the world, at the cutting edge of AI-powered ECG development," said Andrew Simpson, CEO of HeartSciences. "This is a transformative event for the Company and will significantly strengthen our

business, accelerate our development and broaden the range of prospective solutions that we will provide for patients.

In addition to providing algorithms on our MyoVista device we also intend to develop a cloud-based, device agnostic platform to enable HeartSciences to provide AI-solutions to help identify cardiovascular disease in any care setting worldwide in a manner to best suit different care providers."

Girish Nadkarni, MD, MPH, Irene and Dr. Arthur Fishberg, Professor of Medicine at the Icahn School of Medicine at Mount Sinai, System Chair of the Division of Data-Driven and Digital Medicine (D3M), Co-Director of the Mount Sinai Clinical Intelligence Center (MSCIC), and the Co-Director of the Charles Bronfman Institute of Personalized Medicine said, "Cardiovascular disease is the leading cause of death around the world, with over 20 million fatalities annually. Accordingly, early detection and treatment are of paramount importance. AI-powered ECG analysis offers the potential of achieving these goals, potentially reducing healthcare costs and improving patient quality of life. Icahn Mount Sinai is a leader in this developing field, having assembled a world class team of researchers led by Akhil Vaid, MD, Instructor in the Division of Data Driven and Digital Medicine (D3M), and invested in the curation of data for millions of ECG records with our Scientific Computing Infrastructure. We are delighted to enter into this agreement with HeartSciences and look forward to a close relationship and bringing these important technologies to market."

Erik Lium, PhD, the Chief Commercial Innovation Officer of the Mount Sinai Health System and the President of Mount Sinai

Innovation Partners, said, "HeartSciences is one of a small number of companies working to bring new AI-powered ECG capabilities to market. We believe that these types of technologies may enable the early detection of heart disease and improve the lives of patients."

The artificial intelligence cardiovascular algorithms are based on technology developed by Mount Sinai faculty and licensed by Mount Sinai to HeartSciences. Mount Sinai and Mount Sinai faculty, including Dr. Nadkarni; Dr. Vaid; Joshua Lampert, MD, Medical Director of Machine Learning for Mount Sinai Heart; Vivek Reddy, MD, Director of Cardiac Arrhythmia Services for The Mount Sinai Hospital and Mount Sinai Health System, and The Leona M. and Harry B. Helmsley Charitable Trust Professor of Medicine in Cardiac Electrophysiology at Icahn Mount Sinai; and Son Duong, MD, Assistant Professor of Pediatrics (Pediatric Cardiology) at Icahn Mount Sinai, have a financial interest in this technology and in HeartSciences. The financial interest of Mount Sinai faculty is pursuant to the Mount Sinai Intellectual Property Policy.

For more information, please visit:

<https://www.heartsciences.com>

Twitter: [@HeartSciences](https://twitter.com/HeartSciences)





Academic Physician - Pediatric Cardiology

The University of Chicago's Department of Pediatrics, Section of Cardiology, and Comer Children's Hospital seek a full-time faculty member on the non-tenure eligible track in the area of Fetal Cardiology at the Associate Professor or Professor rank. The appointee will serve as the Medical Director of the Fetal Cardiology program. The proposed rank and compensation (including a generous package of fringe benefits) will be determined by qualifications.

The appointee will have a minimum of 5 years of clinical experience. Clinical responsibilities will include outpatient clinic, inpatient consultations, and reading EKGs, ECHOs, and Fetal ECHOs at our main campus and other affiliated sites. Other duties will include scholarly activity, and training and supervision of trainees and students throughout the Chicagoland Children's Health Alliance Cardiovascular service line. The Chicagoland Children's Health Alliance is a partnership between Comer Children's Hospital, Advocate Children's Hospital, and NorthShore University Health System Pediatrics.

The Chicagoland Children's Health Alliance's Cardiovascular service line is among the nation's top Children's heart programs. Our team includes 30 attending cardiologists, 6 categorical cardiology fellows, several additional advanced fellows, four pediatric cardio-thoracic surgeons, and a dedicated cardiac anesthesia service. Our cardiac surgeons perform over 400 cardiac operations per year and achieve outcomes that rank among the best in the nation (STS-CHS-Database). We also have one of the highest ambulatory clinic volumes in the country with clinic sites throughout Chicago, the Chicago suburbs, Northern Illinois, and Northern Indiana. Our program provides expertise in echocardiography, advanced cardiac imaging CT/MRI, electrophysiology, interventional cardiac catheterization, fetal cardiology, adult congenital heart disease, Marfan Syndrome, Hypertrophic Cardiomyopathy, cardiac critical care, and preventative and rehabilitative cardiology.

Prior to the start of employment, an individual must possess the following qualifications: (1) have a medical doctorate or equivalent, (2) hold or be eligible for medical licensure in the states of Illinois and Indiana (3) be Board Certified or Board Eligible in Pediatric Cardiology, and (4) have completed a 4th year fellowship in Fetal Cardiology.

To be considered, those interested must apply through The University of Chicago, Academic Recruitment job board, which uses Interfolio to accept applications: <http://apply.interfolio.com/125804>. Applicants must upload a CV including bibliography and cover letter. Review of applications ends when the position is filled.

Equal Employment Opportunity Statement

All University departments and institutes are charged with building a faculty from a diversity of backgrounds and with diverse viewpoints; with cultivating an inclusive community that values freedom of expression; and with welcoming and supporting all their members.

We seek a diverse pool of applicants who wish to join an academic community that places the highest value on rigorous inquiry and encourages diverse perspectives, experiences, groups of individuals, and ideas to inform and stimulate intellectual challenge, engagement, and exchange. The University's Statements on Diversity are at <https://provost.uchicago.edu/statements-diversity>.

The University of Chicago is an Affirmative Action/Equal Opportunity/Disabled/Veterans Employer and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender identity, national or ethnic origin, age, status as an individual with a disability, protected veteran status, genetic information, or other protected classes under the law. For additional information please see the University's [Notice of Nondiscrimination](#).

Job seekers in need of a reasonable accommodation to complete the application process should call 773-834-3988 or email equalopportunity@uchicago.edu with their request.



DECEMBER

07TH-09TH

UF International Aortic Symposium

Orlando, Florida, USA

<https://floridaaorta.cme.ufl.edu/register/>

08TH-09TH

CSI Focus D-HF 2023

Wiesbaden, Germany

<https://www.csi-congress.org/dhf>

FEBRUARY

22ND-24TH

Innovations in Heart Valve Reconstruction: A Master Class - 8th Annual Advances in Congenital Heart Disease Summit

Lake Buena Vista, Florida, USA

<https://www.clevelandclinicmeded.com/live/courses/congenital/>

APRIL

06TH-08TH

ACC.24

Atlanta, Georgia, USA

https://accscientificsession.acc.org/Registration-and-Hotels/Registration-Rates-and-Dates?utm_source=direct&utm_medium=email&utm_content=A24085&utm_campaign=acc24

17TH-20TH

PICS-IPC Istanbul 2024

Istanbul, Turkey

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Outpatient Imaging Cardiologist

The Ward Family Heart Center at Children's Mercy Kansas City seeks a pediatric cardiologist at the assistant or associate professor level who would have equal roles in echocardiography and general outpatient cardiology. The successful candidate would join an existing group of 28 cardiologists (25 in Kansas City, 2 in Wichita, KS and 1 in Topeka, KS), 4 CV surgeons, 30 APNs. Experience and interest in peri-operative and peri-procedural TEE is a must. Proficiency in 3D and stress echocardiography is preferred. Training/knowledge in MR/CT imaging is preferred but not required. Trainees in their final year are welcome to apply. In addition to providing echocardiography coverage, the successful candidate will be expected to spend one-two days per week in our local general outpatient clinics and serve as attending on cardiology inpatient or consult service 4-6 weeks/year.

Candidates must be board-certified or board-eligible in Pediatric Cardiology. Strong communication skills are key. There are ample opportunities for clinical/translational research and teaching (medical students, residents and Pediatric Cardiology fellows). Salary and academic rank are commensurate with experience.

Our Heart Center serves a population of over 5 million in the heart of the U.S.A. We perform over 500 cardiac operations, 600 cardiac catheterizations including over 200 invasive EP procedures, 18,000 outpatient visits, and more than 20,000 echocardiograms annually. Our two state-of-the-art catheterization labs are both hybrid labs and equipped with the latest 3D imaging and EP technology. Telehealth is available and facilitates our outreach clinics. We have video-conferencing capabilities that are routinely used by providers from distant locations to dial into our conferences for patient care and education. In 2022, the Ward Family Heart Center program was ranked #19 nationally by USNWR.

Our super-specialty resources include Electrophysiology (which includes Clinical EP, pacing and Genetic Arrhythmia), Cardiac Transplantation/Heart Failure, Interventional Cardiology and Advanced Cardiac Imaging (fetal echo, 3D echo, trans-esophageal echo, CT, MRI and 3D printing). We also provide specialized, team-based care in Fetal Cardiology (with on-site delivery services for high-risk neonates), Interstage Monitoring (CHAMP), Preventive Cardiology, Cardiac Genetics, Cardio-oncology, Single Ventricle Survivorship, Pulmonary Hypertension, a dedicated POTS clinic and Cardiac Neurodevelopmental Services.

Please submit CV and cover letter to:
<https://faculty-childrensmercykc.icims.com/jobs/27456/physician/job>

For more information:

Aliessa Barnes MD

Co-Director, Ward Family Heart Center; Chief, Section of Cardiology

816.983.6225, apbarnes@cmh.edu

For more information about Children's Mercy Kansas City and about Kansas City itself, visit cmkc.link/TakeYourPlace.



CHOC Specialists

Pediatric Cardiologist

The **CHOC Specialists Division of Cardiology** at **Children's Hospital of Orange County (CHOC)** is seeking a full-time **pediatric cardiologist** to join our well-established team. Responsibilities include expansion of the cardiac MRI program and coverage of the echocardiography laboratory. Opportunities in quality improvement, education and administrative activities are available and encouraged. In conjunction with University of California Irvine, there will be opportunities for teaching (medical students and residents) and clinical research.

Successful candidate will have completed a categorical fellowship in Pediatric Cardiology, be board certified/eligible in pediatric cardiology, and be eligible for an unrestricted California medical license. Additional training in imaging is desirable.

CHOC Specialists, a private pediatric subspecialty group, is composed of more than 425 physicians and advance practice providers within 26 pediatric subspecialties. This group practices at CHOC, a premier healthcare system based in Orange County, Calif. Named one of the best children's hospitals by U.S. News & World Report (2023-2024), CHOC is exclusively committed to the health and well-being of children through clinical expertise, advocacy, outreach and research that brings advanced treatment to pediatric patients. Affiliated with the University of California, Irvine, CHOC's regional healthcare network includes two state-of-the-art hospitals in Orange and Mission Viejo, several primary and specialty care clinics, a pediatric residency program, and four centers of excellence - The CHOC Heart, Neuroscience, Orthopaedic and Hyundai Cancer Institute.

At the **nationally recognized CHOC Heart Institute**, care team members are part of a highly specialized pediatric cardiology team dedicated to nurturing, advancing and protecting the health and well-being of children. With our recent collaboration with UCLA Health, we look forward to enhancing access to world-class pediatric congenital cardiac care for children and their families across Southern California. Leveraging our combined expertise, resources, and innovative approaches, the two renowned health care institutions will work together to provide medical services to children with congenital heart conditions across Southern California. Together, UCLA Health and CHOC will expand access to specialized cardiac care, advance research and education, and further improve the health outcomes of young patients.

We are growing with a new 24-bed dedicated CVICU slated to open early 2025 to better care for the children and families in the region. We celebrate learning, curiosity, discovery and fun. As a Magnet recognized pediatric health system, we are dedicated to fostering excellence in our people. Our CVICU has also earned the AACN Silver Beacon Award for Excellence; and the Heart Institute has earned the U.S. News and World Report designation for cardiology and heart surgery.

Orange County, California, is famous for its warm climate, with average temperatures of 70 degrees and up throughout most of the year. Orange County boasts unbeatable entertainment, shopping and attractions and with the beach, mountains and desert all within short driving distances, there is something for everyone.

Interested candidates please upload your CV directly to our career site below:

<https://us232.dayforcehcm.com/CandidatePortal/en-US/csproviders/Posting/View/1466>

For more information you may contact:

Wyman Lai, MD @ WLai@choc.org or Pierangelo Renella, MD @ PRenella@choc.org

Salary scale is \$240,000.00 to \$408,000.00 annually. Rate of pay is determined by various factors, including but not limited to knowledge, skills, competencies, experience, education, as well as position requirements.



Pediatric Cardiologist

Opportunity in the South Bay Area - Capitola, California

Packard Children's Health Alliance / Stanford Children's Health is actively recruiting a Cardiologist to join our group in [Capitola](#).

Position details/qualifications:

- MD or DO
- BC/BE in Pediatric Cardiology
- Current license to practice medicine in the state of California

Our location:

- Close proximity to Santa Cruz, known for its beaches, redwood forests, and unique surf and arts culture
- Breathtaking views of Monterey Bay
- Enjoy our mild weather where the sun shines 300 days/year

We offer:

- \$325,000-\$375,000 plus annual productivity incentives
- Full benefits package, including relocation bonus for qualified moves

At Stanford Children's Health, we are focused on bringing world-class, family-centered care to communities throughout the San Francisco Bay Area. A rapidly growing medical foundation, developed in partnership with Lucile Packard Children's Hospital Stanford and the Stanford School of Medicine, we are bringing together some of medicine's premier talent to meet the health challenges faced by today's children and expectant mothers. If you'd like to be part of an organization that's establishing new standards of care—and helping children and their families grow stronger every step of the way—consider joining us today.

To find out more about how you can make an impact on our growing organization, please send your resume with "**Pediatric Cardiologist**" in the subject line of your email to: mlipman@stanfordchildrens.org.



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kate.f.baldwin@gmail.com

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