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Siege™ Vascular Plug: A New Microcatheter Deliverable Vascular Plug

Gurumurthy Hiremath, MD, FACC, FSCAI, FPICS

Introduction

Children with Congenital Heart Disease (CHD) often develop abnormal blood vessels that may require transcatheter embolization. Notable examples of these are aorto-pulmonary collaterals (APCs) and venovenous collaterals (VVCs) found in children after single ventricle palliative surgeries. A variety of coils and particles have been used in these indications. The MVP™ micro vascular plug (Medtronic) was introduced in 2013 for peripheral vascular embolization. Its microcatheter compatibility was appealing and was soon adopted by congenital interventional cardiologists and has been used effectively for embolization in various scenarios, ranging from collateral vessel treatment to occlusion of the premature patent ductus arteriosus. Microvascular plugs are often used in conjunction with coils and particles to close collateral vessels in single ventricle disease. Here, we introduce a new microcatheter-deliverable vascular plug with unique properties that are highly valuable.

Siege™ Vascular Plug

The Siege™ Vascular Plug (Merit Medical, South Jordan, UT, USA) is a self-expanding bi-lobed vascular implant offered in three sizes designed for peripheral arterial embolization in vessels measuring 1.5–6.0 mm in diameter (**Figure 1**). The plugs are constructed from densely-braided nitinol wires for rapid occlusion with each plug having a defined treatment range. Unconstrained lengths range from 7–9 mm and fully constrained lengths range from 20–36 mm when measured end-to-end (**Table 1**). The 4.5 & 6.5 mm sizes are compatible with 0.021–0.027-inch microcatheters and the 8.5 mm size is compatible with 0.027-inch microcatheters (**Table 2**). Highly visible radiopaque markers are provided on the distal and proximal ends of the plug, as well as at the distal end of the delivery wire, for easy fluoroscopic visualization and precise placement. All plugs are connected to the delivery wire with mechanical threads and are fully repositionable or recapturable. A torque

FIGURE 1 Siege Vascular Plug

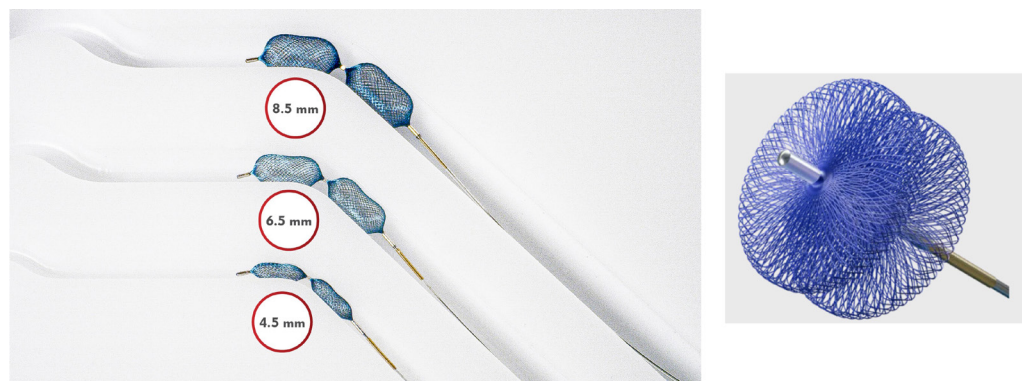




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STENT PLACEMENT BALLOON CATHETER



Two-stage inflation process

allows for an even stent expansion and correct positioning within the vessel.



TABLE 1 Plug diameters, treatment range and unconstrained / constrained lengths

Actual Plug Diameter	Minimum Artery Diameter	Maximum Artery Diameter	Unconstrained Length*	Fully Constrained Length*
4.5 mm	1.5 mm	2.5 mm	7 mm	20 mm
6.5 mm	2.5 mm	4 mm	8 mm	30 mm
8.5 mm	4 mm	6 mm	9 mm	36 mm

* Approximate - measured end to end

TABLE 2 Microcatheter compatibilities

COMPATIBILITY INFORMATION

Description	Catalog Number	Minimum Inner Diameter	Maximum Length
Boston Scientific Renegade™ STC 18 (2.4F/3.0F)	SVP2.5-0.021	0.021"/0.533 mm	175 cm
Medtronic Rebar™ (2.4F/2.7F)			
Merit Medical SwiftNINJA® (2.4F/2.6F–2.9F)			
Stryker Trevo® Pro 18 (2.4F/2.7F)			
Terumo PROGREAT® (2.4F/2.9F)	SVP4-0.021	0.021"/0.533 mm	175 cm
Boston Scientific Renegade™ HI-FLO™ (2.8F/3.0F)			
Medtronic Rebar™ (2.8F/2.8F)			
Stryker Excelsior® XT-27® (2.7F/2.9F)			
Terumo PROGREAT® (2.8F/3.0F)			

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device is attached to the proximal end of the delivery wire and rotated in a counter-clockwise direction for detachment.

Case Example

An 18-year-old male with Hypoplastic left heart syndrome (HLHS) and failing Fontan physiology was found to have significantly elevated Fontan pressures and chronic desaturation on cardiac catheterization. Angiography revealed the presence of significant aorto-pulmonary (AP) collaterals to both lung fields as well as veno-venous (V-V) collaterals from the superior vena cava to the right pulmonary veins. Baseline angiography performed with an angiographic catheter in the right and left subclavian arteries demonstrated multiple AP collaterals supplying bilateral lung fields, including the right internal mammary artery (IMA) and thyrocervical trunks (Figure 2). Three AP and one V-V collateral were embolized using a combination of Azur® coils (Terumo Interventional Systems), Siegel™ Vascular Plugs (Merit Medical), and a MVP™ micro vascular plug (Medtronic).

The AP collateral network arising from the right IMA was engaged with a coaxial system of 4 fr Judkins right (JR 3.5) catheter, 0.027-inch PROGREAT® microcatheter (Terumo Interventional Systems), and a 0.018-inch Hi-Torque II™ floppy wire (Abbott). Care was taken to advance the microcatheter as distally as possible. Angiography performed in the distal artery showed immediate flow to the pulmonary veins (Figure 3A)—the artery at the distal end measured approximately 1.5 mm. A 4.5 mm Siegel vascular plug was prepared per manufacturer instructions. It was advanced to the distal end of the AP collateral at the appropriate location, and the microcatheter was withdrawn to deploy the plug. The distal radiopaque marker on the delivery wire added to the improved radiopacity of this vascular plug (Figure 3B). Repeat angiography performed after release showed complete and immediate occlusion (Figure 3C). The entire length of the right internal mammary artery, which was supplying the collateral, was then

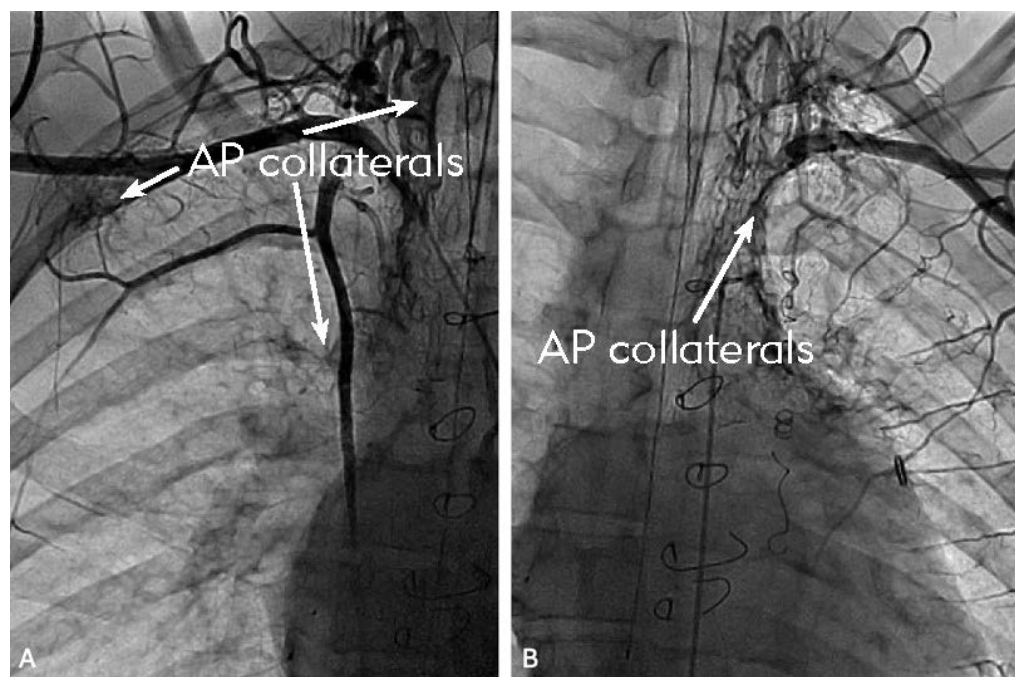


FIGURE 2 Baseline angiography performed in right (Panel A) and left subclavian arteries (Panel B) shows extensive network of AP collaterals from IMA and thyrocervical trunks to both lung fields (arrows).



embolized using a total of five 60 cm long AZUR HydroPack™ coils (Terumo Interventional Systems) through the same microcatheter (Figure 3D).

A similar coaxial system of 4 French JR catheter and PROGREAT® microcatheter (Terumo Interventional Systems) was used to engage the complex network of aortopulmonary collaterals arising from the left thyrocervical trunk. Initial angiography showed multiple distal

feeders to the left lung field (Figure 4A). The proximal feeder vessel measured approximately 2.5 millimeters in diameter. The distal feeder vessels were first occluded by selectively entering at least two branches of the collateral network using one Azur® CX coil (Terumo Interventional Systems) 0.018-inch 2 mm x 4 cm, two each of AZUR HydroPack™ coil (Terumo Interventional Systems) 0.018-inch 10 cm long, and one AZUR HydroPack™ coils (Terumo Interventional

Systems) 0.018-inch 20 cm coil. The proximal end of the aortopulmonary collateral was then 'capped' with a 4.5 mm Siege vascular plug (Figure 4B). Angiography confirmed stable plug position with no residual flow (Figure 4C).

Discussion

Aortopulmonary collateral blood vessels (APCs) are frequently found in patients

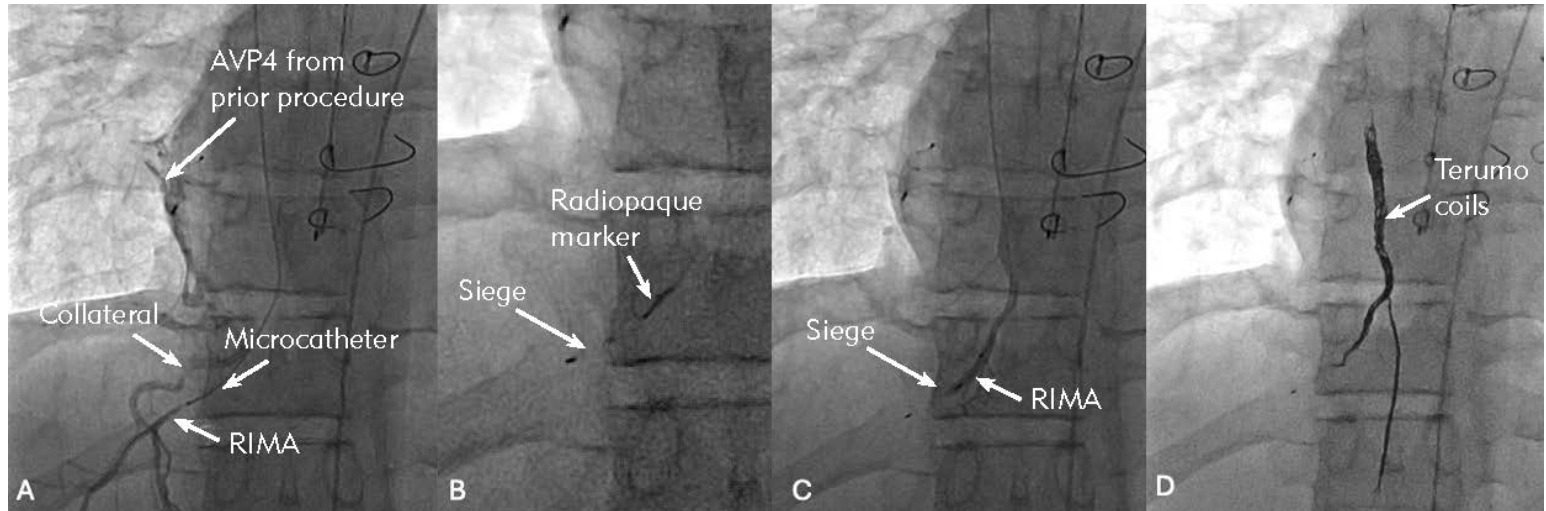


FIGURE 3 RIMA AP collateral to right lung – distal Siege™ Vascular Plug placement using 0.027-inch PROGREAT® microcatheter, followed by packing using AZUR HydroPack™ packing coils. Panel A shows selective angiogram using the microcatheter in the distal artery, with flow to right pulmonary veins, arterial end measured 1.5 mm. Panel B shows distal radiopaque marker of the pusher wire connected to the Siege plug. Excellent distal occlusion was noted (Panel C). Further filling of the length of the vessel was performed with five of the AZUR HydroPack™ 0.018-inch coils each 60 cm in length.

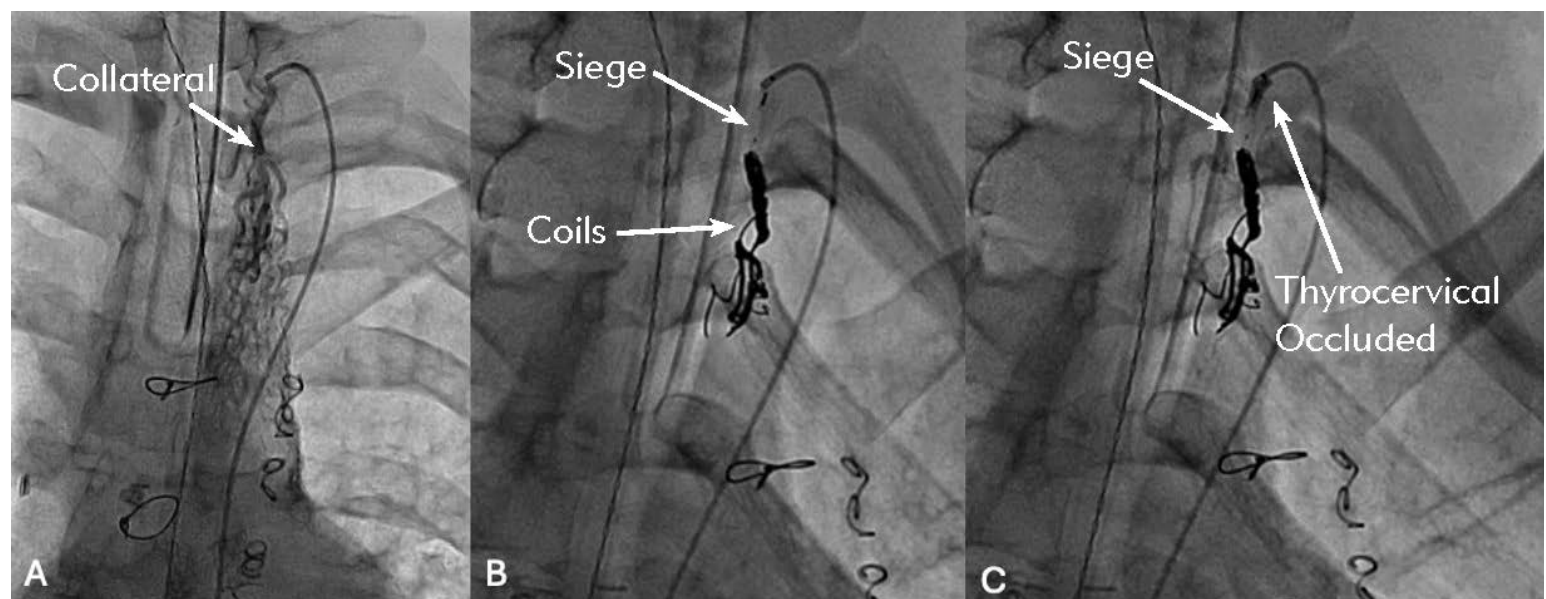


FIGURE 4 Left Thyrocervical AP collateral to left lung – proximal Siege™ Vascular Plug placement. A large network of AP collaterals was noted (Panel A), measuring 2.6 mm proximally. It was successfully occluded with Azur® CX coils 0.018-inch 2 mm x 4 cm, two each of AZUR HydroPack™ 0.018 inch 10 cm long, one AZUR HydroPack™ 0.018-inch 20 cm followed by Siege™ Vascular Plug 4.5 mm proximally (Panel B). Final angiogram showed absence of any residual flow (Panel C).



with single-ventricle heart disease, with their extent varying after surgical procedures. Though the APCs increase pulmonary blood flow, they also load volume to the ventricles and are inefficient because much of the flow is ineffective. The traditional treatment has involved coil/particle occlusion of the feeding vessel. As a general principle for optimal vessel closure, these vessels are occluded as distally as possible and filled back to the feeding vessel with the goal of filling the entire collateral to minimize recanalization. The availability of newer microcatheter-deliverable packing coils that are long (up to 60 cm) makes filling vessels the whole length possible. Leaving the packing coils 'uncapped' at the proximal end may sometimes result in the proximal loops of the coil unraveling and dislodging into the adjacent normal feeding artery. In the author's experience, 'capping' the proximal end with a plug or a shaped coil can prevent this complication. The availability of vascular plugs that can be delivered through the same microcatheter used to deliver the coils avoids catheter exchange and aids usability.

The Siege Vascular Plug was noted to have excellent tracking ability through the 0.027-inch microcatheter despite the tortuosity. The distal radiopaque marker on the delivery wire, along with the two radiopaque markers on the plug, add to the ease of visualization. Despite anticoagulation, the plug was immediately occlusive in both vessels. Potential advantages are the ability to close vessels up to 4 mm using 0.021-inch microcatheters and up to 6 mm vessels using 0.027" microcatheters as well as the ability to conform and still be occlusive in tortuous vessels due to the flexible braided construction.

Conclusion

The Siege Vascular Plug, with its excellent deliverability through a microcatheter, stands out for its rapid occlusion as well as ease of positioning and release with simple-to-recognize fluoroscopic markers and improved visibility. It is a great addition and expands the interventionalist's toolbox in taking care of these complex patients with Congenital Heart Disease.



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Camp is Good Medicine

Sara Creighton, MD

Camp is Good Medicine. As a pediatric cardiologist, I know the ins and outs of medical and surgical therapy for my patients with congenital and acquired heart disease. Through my experience working with Camp Odayin, I have realized that beyond what we do in the hospital and clinics, camp experiences can improve the wellness and mental health of our patients.

Camp Odayin provides camp experiences for young people with heart disease in a medically safe and supportive environment while also creating community building opportunities for kids that may not know many others like them. Their “special hearts” become a badge of honor and connect them with others who are experiencing the same medical challenges during a time in their lives when relationships, fun and acceptance are vitally important. The mission encompasses a holistic approach to healing by supporting the entire child’s wellbeing.

It is well known that young people with heart disease often are at higher risk for anxiety and depression as well as trauma. The goal of Camp Odayin is to improve the quality of life, mental health and overall well-being of our campers. Surveys of our campers showed 57% of campers self-report having been diagnosed with a mental health condition with 52% reporting improvement in their mental well-being by attending a one week residential camp. Parents also noted this change with 65% reporting sustained improvement in their mental health six months later.

As a camp doctor, I get to live these experiences when I see my patients as campers acting like any other kid. And I also can bridge the chasm of camp and the doctor’s office by participating in the talent show and then also visiting them in the hospital. I get to make doctors human and less scary because campers see us get messy and be silly.

We know beyond the campers; heart disease affects the entire family. There is anxiety and trauma for parents and siblings as well. Camp Odayin aims to support these families with Family Camps and parent retreats.

Overall, as a pediatric cardiologist and Camp Doc, I know that Camp is good medicine and changes the lives of all that get to encounter this amazing organization. I encourage all my patients to have this experience.

Our Pay-What-You-Can (PWYC) model for camp registrations supports our commitment to make our programs accessible to everyone in our community. There is always an option to pay \$0. We provide bus transportation to camp from Minneapolis, Milwaukee & Chicago, and we also offer a travel stipend to families who need financial assistance.



Visit www.campodayin.org to learn more!



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A Heartfelt Mission: The Inspiring Partnership of Drs. Kevin Shannon & Heatherly Vandeweghe

Emily Earhart, Director of Development & Communications, Camp del Corazón

For Drs. Kevin Shannon and Heatherly Vandeweghe, life's guiding principle has always been simple: "When you do the right thing, the right thing tends to happen." This philosophy has shaped their careers in pediatric medicine and their shared mission to uplift children with heart disease. Through decades of compassionate care, global outreach, and joyful service at Camp del Corazón, they've created a legacy of kindness, commitment, and community.

Doing the Right Thing in Medicine

Dr. Kevin Shannon, Clinical Professor of Pediatric Cardiology and Director of Pediatric Electrophysiology at UCLA's School of Medicine and Medical Center, has dedicated his career to children with heart disease and heart rhythm disorders. His unparalleled expertise and dedication have transformed countless lives. As Kevin retires from UCLA in June 2025, after 38 remarkable years, his commitment to helping children continues at Camp del Corazón.

Dr. Heatherly Vandeweghe, a pediatrician for over 36 years, has brought warmth and empathy to every patient she has cared for. Her quiet strength and steadfast advocacy for children's health have left an indelible mark on her community. Heather remains an inspiring presence, always stepping in where her support is needed most.

Camp del Corazón: A Place Where the Right Things Happen

In 1995, Kevin and nurse Lisa Knight co-founded Camp del Corazón, a free-of-charge, medically-supervised residential summer camp on Catalina Island. Their vision was to create a safe and joyful space where children with heart disease could feel like normal kids and make friends who have similar experiences and concerns. From its humble beginnings, Camp del Corazón has grown into a vibrant community serving over 300 children each summer and offering year-round programs to more than 650 families and young adults.

Heather has been a pivotal supporter since the camp's inception, helping foster its nurturing and inclusive environment. Together, Kevin and Heather embody the spirit of Camp del Corazón through their playful alter egos, "Big Kahuna" and "Feather." Whether leading snorkeling adventures, serving as cabin counselors, offering medical care, or lip syncing to Sonny and Cher, their presence underscores the camp's essence: healing through joy, laughter, and belonging. "Camp is where kids can

be themselves without feeling different," Heather says.

As husband and wife, their lifelong dedication to the Congenital Heart Disease community is a family value. They raised three children while running Camp del Corazón, and today, all three are volunteer counselors and lifeguards, continuing the family tradition of giving back.

Global Service: Bringing Healing to the World

Kevin and Heather's dedication extends far beyond Camp del Corazón. Through their work with the Gift of Life organization, they have provided life-saving cardiac care to children in underserved regions worldwide. Their humility, compassion, and determination have given countless children a second chance at life while strengthening communities globally.

A Celebration of Service: The Gala del Sol - April 5, 2025

This April, Camp del Corazón will celebrate its 30th anniversary with the Gala del Sol, honoring Kevin and Heather for their extraordinary contributions. This milestone event will be especially poignant as Kevin prepares to retire from UCLA. It is an opportunity to celebrate not only their professional accomplishments but also the profound humanity they bring to every endeavor.

Join us on April 5th at the Gala del Sol in Los Angeles to celebrate 30 years of Camp del Corazón and honor Kevin and Heather's incredible work. If you are unable to attend, please consider donating, sponsoring, or providing a tribute to honor their legacy. Your support will help ensure that more children with heart disease experience the joy and belonging they deserve.





SAVE THE DATE
Gala del Sol



Honoring Dr. Kevin Shannon
 & Dr. Heatherly Vandeweghe

SATURDAY APRIL 5, 2025
 -Herscher Hall at The Skirball Center



Don't miss this heartfelt evening of celebration and appreciation. Your sponsorship or donation will ensure Camp del Corazón's programs remain free-of-charge to children and young adults with heart disease. Learn more about how you can be a part of this incredible night at <https://www.campdelcorazon.org/gala>.

Questions? Please contact: gala@campdelcorazon.org.



Event Details

- Date: April 5, 2025
- Time: 6:00 PM – 10:00 PM
- Location: Herscher Hall, Skirball Center, Los Angeles, CA



SAVE THE DATE

Join the PICS Society in
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The SickKids Advanced Cardiology Education (ACE) Program

Alyssa Gumapac, BHSoc, Communications Specialist, SickKids Learning Institute



The Hospital for Sick Children (SickKids) is pleased to offer bursaries for the Advanced Cardiology Education (ACE) Program to eligible applicants (**\$2,400 CAD**). **Apply now:** <https://cvent.me/OxzN4B>

If you are reading this, you are likely aware of the prevalence of Pediatric and Congenital Heart Disease (PCHD) and its continued neglect in the global health agenda.¹ Throughout February—Heart Month—organizations and advocates raised awareness, amplifying the need for greater attention to PCHD. These campaigns highlight heart health, cardiology education, and the importance of cardiovascular research and funding, all aimed at improving care. They often cite a key statistic: heart disease affects 1 in every 100 live births.

If you were not aware of these Heart Month initiatives, that is okay. This health awareness campaign is most prominent in Canada and the United States, where most children born with major congenital anomalies survive into adulthood. However, in low- and lower-middle-income countries (LMICs), where over 90% of PCHD patients lack adequate care, the need for continued clinician education and advocacy is even greater.²

Recognizing health disparities, limited access to specialized knowledge, and resource shortages in LMICs, SickKids is pleased to offer bursaries for the Advanced Cardiology Education (ACE) Program to eligible applicants. Successful recipients will receive a **\$2,400 CAD** bursary, applied directly at course registration.

To be eligible, applicants must be a:

- National of and reside in a low- or lower-middle income country as defined by the World Bank Country and Lending Groups
- Health care professional currently providing care to children with heart disease

Why Apply?

We believe financial equity for health care professionals is crucial to building a more just and sustainable global health system. By offering bursaries, we aim to remove at least one barrier to accessing knowledge from one of the world's leading Heart Centres, the SickKids Labatt Family Heart Centre.

While it may seem counterintuitive to ask clinicians with heavy caseloads and limited resources to take on additional coursework, bursary recipients consistently find the SickKids ACE Program's content fulfilling and empowering. They gain exposure to new technologies and interventions not readily available at their centres, as well as diverse perspectives rarely encountered in their own regions.

Conversely, it's important to acknowledge the local context. Change won't happen overnight or by the end of this course. New technology and resources will not suddenly appear. However, by combining enhanced technical, cognitive, collaborative, and affective skills gained from the program and international perspective with the realities of resource-limited settings, health care professionals will be better equipped to manage patient needs, advocate for change, and drive bottom-up improvements.

Dr. Amshu Shakya, Pediatric Cardiologist at the Shahid Gangalal National Heart Centre in Nepal, and a 2024 SickKids ACE Program bursary recipient says: "Participating in this program is one of my best decisions as far as academic and career development is concerned. It has boosted my confidence in caring for the children with cardiac problems and I am, now, better equipped to handle any challenges... It is truly rewarding to see how this program has made a difference in my practice and the lives of the children we care for."

Another bursary recipient, Dr. Maryam Usman, Pediatric Cardiologist at the Federal Teaching Hospital Gombe in Nigeria says: "I have acquired a lot of knowledge in different aspects of pediatric cardiology especially in areas related to cardiac intensive care, nutrition, newer technologies and practices (e.g. NIRS, e-CPR, cEEG, virtual simulation). These are areas that I previously did not have any significant exposure to. The cardiac morphology courses were very detailed and they have significantly improved my understanding of Congenital Heart Diseases."



Nurses Wanted

Managing PCHD safely and effectively requires a robust infrastructure and an interprofessional team. However, some LMICs face a critical shortage of cardiac specialists. For example, Africa has only 2,000 cardiologists for a population of 1.2 billion, including both adults and children, making nurses and support staff essential to health care delivery.¹ A study in Tanzania—a region with just one cardiac center—found that due to resource constraints, nurses frequently take on tasks beyond their scope, highlighting the urgent need for continued education and training.^{3,4}

The SickKids ACE Program offers 200 accredited learning hours over two semesters, led by more than 100 interprofessional expert speakers. The content is designed for all health care professionals caring for children with heart disease. Notably, almost 30% of participants are nurses from various settings who find the program's lessons highly valuable.

We strongly believe building capacity across care teams in LMICs is essential to improving care for children with heart disease globally. We encourage all health care professionals from LMICs to leverage this bursary opportunity and apply.

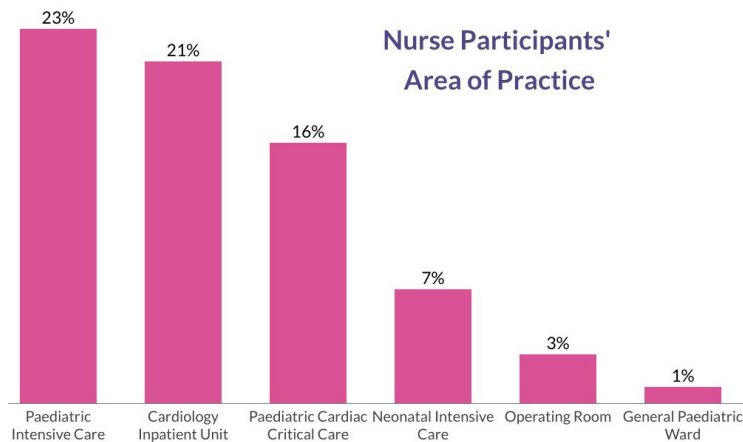


FIGURE 1 Nurses make up almost a third of ACE Program participants (28%), with many practicing in pediatric intensive care, cardiology inpatient units and paediatric cardiac critical care.

Virtual Reality

If you are still reading, it is clear that the resource challenges LMICs face in managing PCHD cannot be ignored and that continued education and training are key to improving care.

The reality is, many health care professionals with the means to do so seek education abroad, further depleting resources in these regions.¹ By delivering the SickKids ACE Program online, we provide flexible, accessible learning while enabling health care professionals to continue practicing where they are needed most.

Despite the 7-hour time difference from Tanzania, Dr. Megha Unadkat, Paediatric Cardiologist at the Jakaya Kikwete Cardiac Institute, was able to leverage online resources to understand complex concepts and build a global network: “These are challenging concepts, but the course’s repeated reinforcement and access to recordings and slides made them easier to grasp over time. Even though the course was online, I made friends, participated in group presentations with people from around the world, and even found a mentor—I had never experienced that before...Even though my fellowship faces challenges due to limited resources, [the program] introduced me to international advancements, the latest drug trials, and advanced heart failure management. I gained insights from both perspectives, which made learning about pediatric cardiology ideal.”

- **Apply Now!** <https://cvent.me/OxzN4B>
- **Bursary applications are open until June 20th, 2025, at 11:59 PM ET**

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American Society of Echocardiography and its Foundation Award \$100,000 in Grant Funding to Early Career Investigators in Cardiovascular Imaging

The American Society of Echocardiography (ASE) and the ASE Foundation have awarded grant funding totaling \$100,000 to fund four innovative cardiovascular ultrasound research projects led by early career investigators.

The Society's EDGES (Early-Career Development Grant for Echo Scientists) program funds projects that address clinical gaps in cardiovascular ultrasound through research directed by an early career scientist or investigator.

The four 2024 EDGES recipients, each awarded a \$25,000 grant, will conduct studies addressing a wide range of research projects.

Sae Jang, MD, a clinical instructor and National Institutes of Health T32 research fellow at the University of Pittsburgh Medical Center Department of Cardiology in Pennsylvania, will investigate if microbubbles and ultrasound can be developed as a diagnostic tool for early capillary structural changes in patients with microvascular disease.

James MacNamara, MD, MSCS, an assistant professor at the University of Texas Southwestern in Dallas, will utilize the grant to better understand the limitations to exercise in patients with Hypertrophic Cardiomyopathy (HCM) and how these patients respond to therapies.

David McNamara, MD, MPH, a non-invasive, board-certified cardiologist at Corewell Health in Grand Rapids, Mich., will research radiation safety during structural heart procedures and the role of radiation protection devices in clinical practice, specifically for interventional echocardiographers.

Minh Nguyen, MD, FASE, a pediatric cardiologist and assistant professor of pediatrics at Texas Children's Hospital, Baylor College of Medicine in Houston, secured the funding to develop a foundation model on pediatric echocardiograms to predict adverse events in pediatric HCM.

ASE Past President and Chair of the Society's Research Committee Jonathan Lindner, MD, FASE, shared why this funding is important for the field.

"The EDGES program represents a tremendous investment by ASE in the future of imaging research. These grants fill a major gap by supporting early career imaging scientists during a critical stage of their development by providing resources to pursue their own idea," said Dr. Lindner. "We look forward to seeing how the EDGES recipients leverage their grants to obtain



further national funding and hearing about the impact of EDGES on the upward trajectory of tomorrow's research leaders."

ASE developed the EDGES research program in 2023 to create an avenue for the continued evolution of cardiovascular ultrasound. The program's initial three recipients were each awarded \$25,000 to fund artificial intelligence and technology-focused research projects. ASE plans to offer its EDGES grants annually to support technical advancements and new applications of echocardiography.

Learn more about these grants and the recipients at ASEFoundation.org/Research.

About American Society of Echocardiography

The American Society of Echocardiography (ASE) is the Society for Cardiovascular Ultrasound Professionals™. ASE is the largest global organization for cardiovascular ultrasound imaging serving: physicians, sonographers, nurses, veterinarians, and scientists, and as such, is the leader and advocate, setting practice standards and guidelines for the field. In 2025, ASE is celebrating its milestone 50th anniversary. The Society is committed to advancing cardiovascular ultrasound to improve lives. For more information, visit the ASE website ASEcho.org or social media accounts on Facebook, X (formerly Twitter), LinkedIn, Instagram, or Bluesky.

About American Society of Echocardiography Foundation

The ASE Foundation (ASEF) is a 501(c)(3) nonprofit corporation created in 2003 as ASE's charitable arm. The Foundation helps to assure the viability and visibility of cardiovascular ultrasound. Dependent upon donor giving not supported by membership dues, ASEF funds initiatives such as training scholarships, guidelines-based projects, research, patient engagement, and global health outreach. For more information, visit the ASEF website ASEFoundation.org.





Philips Aims to Transform Diagnostic Cardiology with the US Launch of the Cardiac Workstation

Launching in the US, Philips Cardiac Workstation uses Sophisticated Algorithms to Speed Collection and Processing of ECG Data, Helping Streamline Care and Prioritize At-Risk Patients

Last year Philips, a global leader in health technology, introduced Cardiac Workstation, a groundbreaking cardiac care platform designed to accelerate clinical decision-making and care for cardiology patients, in Europe, the Middle East and Africa. Philips recently received 510(K) clearance from the FDA making it now available in the US as well.

The Cardiac Workstation uses advanced algorithms to access, analyze, and manage electrocardiograph (ECG) data either remotely or at the point of care. This new technology builds on the cardiograph of the past to help improve diagnostic cardiology by streamlining data collection and reducing administrative workload – allowing care teams to spend more time on direct patient care.



Clinicians review ECG data on Philips Cardiac Workstation

“A common theme I hear from care providers and hospital administrators is that they seek ways to alleviate their care teams’ workload without sacrificing the quality of patient care. To achieve that, they need access to the right information

at the right time, wherever their point of decision may be,” said Stefano Folli, Business Leader, Ambulatory Monitoring & Diagnostics, Philips. “That’s the beauty of Philips Cardiac Workstation. It helps streamline workflow using advanced algorithms to access and analyze ECG from anywhere, paving the way to more efficient and effective patient care by enabling clinicians to quickly identify and prioritize the most at-risk patients,” said Stefano Folli, Business Leader, Ambulatory Monitoring & Diagnostics, Philips.

“That’s the beauty of Philips Cardiac Workstation. It helps streamline workflow using advanced algorithms to access and analyze ECG from anywhere, paving the way to more efficient and effective patient care by enabling clinicians to quickly identify and prioritize the most at-risk patients,” said Stefano Folli.

Heart disease remains the leading cause of death globally.¹ Challenges and costs of managing cardiac conditions continue to grow while staff shortages, retention challenges, and expanded training requirements remain imminent. Administrators and clinicians face increasing pressure to efficiently care for this growing population of cardiac patients across a variety of care settings, which requires an end-to-end, broader ecosystem approach. The Cardiac Workstation helps to address these challenges by:

- **Enhancing Workflow** – Gesture-driven interactions like zoom, scroll and swipe functions allow care providers to review and interpret ECGs with the same familiarity as if they were using a smartphone. A simple interface with a three-step workflow also helps clinicians minimize data entry errors and quickly capture, analyze and export accurate ECGs.
- **Providing Clinical Decision Support** – The ability to access and view accurate demographic information and deep clinical data around the patient – such as





Philips Cardiac Workstation

and shared throughout the enterprise. This holistic view of patient data enables care to take place in the most cost-and-clinically-effective setting, while ensuring informed diagnoses and interventions.

Philips' flexible diagnostic, screening and enterprise ECG management solutions advance a new standard of cardiac care, giving healthcare organizations the power to deliver better diagnostics by enabling intervention and treatment in the right setting, at the right time. When leveraging the full strength of the Philips ECG portfolio, care providers can strategically manage the patient population through new, accessible care models informed by healthcare data and actionable insights.

zooming in on views of irregular rhythms or scrolling through multiple ECGs to identify trends – support clinicians in making confident and timely care decisions. When used in tandem with the Philips IntelliSpace ECG management system, clinicians can also view side-by-side comparisons of current and previous ECGs to identify trends and risks.

- **Enabling Enterprise Interoperability** – Designed to be part of a broader ecosystem, Cardiac Workstation can interoperate with multiple enterprise systems beyond IntelliSpace ECG or your current departmental systems. Seamless integration with existing electronic medical record (EMR) and system technology allows ECG data to be easily accessed

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