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AHN CARDIOVASCULAR INSTITUTE

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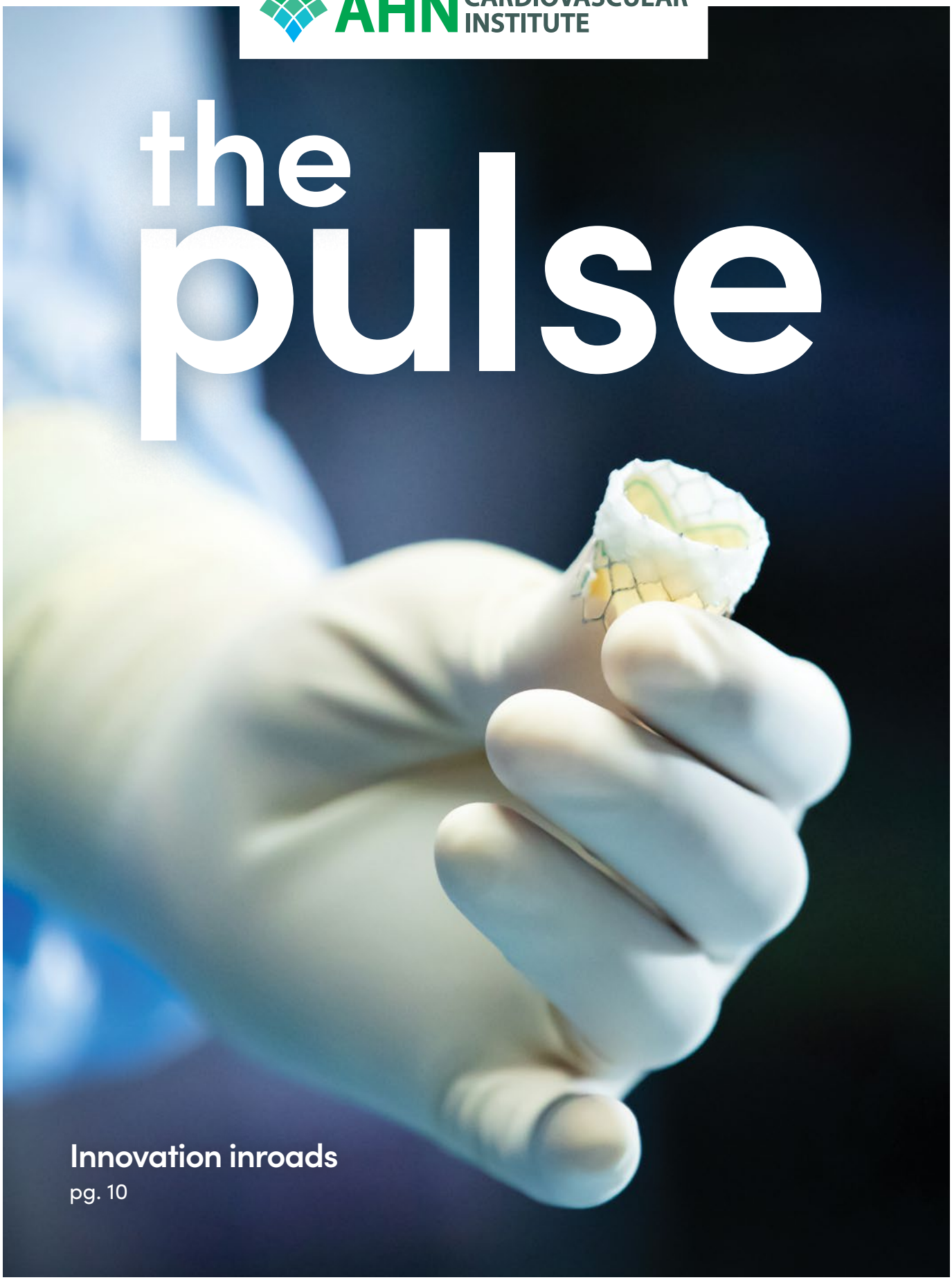
the pulse



Innovation inroads

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IN THIS ISSUE

The Pulse is a publication from the Allegheny Health Network (AHN) Cardiovascular Institute for referring physicians. Please send your comments to lisa.huckestein@highmarkhealth.org.

ON THE COVER

The TAVR heart valve is designed to shape itself to each patient's anatomy.

Message from our chairmen

For the last several years, AHN has focused on bringing specialized care close to where people live — from rural communities to sprawling suburbs to urban neighborhoods. For our patients at the AHN Cardiovascular Institute, this means they don't have to travel far for new and updated facilities, heart experts, and innovative procedures and treatments. For you — our referring physician colleagues — this integrated care model has given you the opportunity to connect your patients with advanced cardiovascular care, right in your practice area.

You will read in the pages ahead about how we continue to expand our capabilities throughout the region. For instance, we are now performing transcatheter aortic valve replacement (TAVR) at Forbes Hospital and Jefferson Hospital. TAVR has become the standard of care for high- and intermediate-risk patients needing aortic valve replacement at Allegheny General Hospital (AGH), where we've performed more than 2,000 procedures.

AGH recently earned the maximum three-star rating from the Society of Thoracic Surgeons (STS) for the quality and patient outcomes across three categories of transcatheter aortic valve replacement (TAVR), coronary artery bypass grafting (CABG), and aortic valve replacement with CABG. This places AGH among the most elite cardiovascular programs in the country, representing the top 4% to 7%.[1] U.S. News & World Report also rated AGH as a high-performing TAVR center. Facilities that earned a high-performing rating were significantly better than the national average. This experience and expertise are what allow us to confidently extend the TAVR program to other AHN hospitals.

You will also read about the minimally invasive advances that our heart specialists are performing. The MitraClip™ device clips onto heart valves to stop leaks and restore normal blood flow. Also, the WATCHMAN™ is an alternative to blood thinners for patients with nonvalvular atrial fibrillation. This device permanently closes the left atrial appendage to stop clots from forming and reduce stroke risk.

Another article highlights how collaboration extends outside of our cardiovascular walls to our oncology colleagues. The AHN Cardio-Oncology Program brings together oncologists and cardiologists to help prevent, monitor, and treat cardiovascular disease to avoid or treat the aftereffects of cancer therapies.

AHN is working as a true system, interconnected and interdependent. From evidence-based medicine to the latest interventions, we're extending high-quality care to cover every direction of our region. We encourage you to contact us about any of our treatments or programs and let us know how we can help your patients experiencing any potential cardiovascular issues.

Sincerely,

Stephen H. Bailey, MD
Chair
AHN Department of Thoracic and Cardiovascular Surgery

Srinivas Murali, MD
Chair
AHN Department of Cardiovascular Medicine

[1]www.sts.org/media/sts-public-reporting-toolkit/press-release-templates-announcing-three-star-ratings

“In both oncology and cardiac care, I don’t think I could have gotten better care from anyone, anywhere.”

— Bob Auld, Cardio-Oncology patient

Protecting at-risk hearts

MANAGING SIDE EFFECTS OF CANCER TREATMENT

During a routine wellness checkup, Bob Auld’s primary care physician noticed bloating on one side of his abdomen. An ultrasound and biopsy later revealed that Bob had diffuse large B-cell lymphoma (DLBCL), the most common type of non-Hodgkin’s lymphoma.

“It was considered stage 4, which shocked me because I didn’t have any of the typical symptoms for this type of cancer, like swollen lymph nodes and night sweats,” said the 63-year-old, who lives in West View with his wife, Ruth.

He was referred to Sarah Miller, DO, an AHN medical oncologist at the Wexford Health + Wellness Pavilion. From May to September 2019, Bob had chemotherapy treatments, and a follow-up scan showed no lymphoma left in his body.

But Bob still wasn’t feeling great and started experiencing symptoms he didn’t have prior to treatment, like losing his breath while walking up stairs. AHN physicians found that the chemotherapy used to treat Bob’s cancer negatively affected his heart. He was diagnosed with atrial fibrillation (A-fib), an irregular heartbeat that limited his heart’s pumping ability.

“The chemo did its job on the lymphoma, but it also affected the efficiency of my heart,” Bob said.

EXPERTS KEEP HEARTS BEATING

Chemotherapy, radiation therapy, and other cancer treatments are lifesaving, but they can also cause side effects that damage the heart. This is especially the case for people who already have heart disease or — like Bob — are at risk for it.

AHN has a highly specialized Cardio-Oncology Program dedicated to collaborative cardiac care for patients with cancer. It brings together expert teams that customize the best cancer therapies for patients balanced against their cardiac effects.

Cardiologist Indu Poornima, MD, leads the team as division director of AHN Cardiovascular Disease Prevention, which includes the Cardio-Oncology Program. She said the team's goal is to recognize early signs and symptoms of cardiac issues and follow patients closely to prevent future heart problems.

Through the program, patients can receive cardiac risk assessment, interventions for minimizing risk, assessment of the cardiac effects of cardio-toxic chemotherapies, and advanced imaging to detect and treat heart disease. AHN has Cardio-Oncology programs at both Allegheny General Hospital in Pittsburgh and Saint Vincent Hospital in Erie.

Oncologists typically refer patients to the program if they have high blood pressure or diabetes or had previous heart surgery. They also consider a patient's age, their type of treatment, and the duration of the treatment period.

"The co-management of patients by oncology and cardiology facilitates continuation of the best cancer therapies even for patients with known cardiac problems," Dr. Poornima said.

CANCER-FREE AND STRONG HEART

In Bob's case, Dr. Poornima used specialized imaging and a combination of medications to effectively treat his A-fib. His health consistently improved throughout 2020, and doctors expect that trend to continue.

Bob says he's grateful for the care he received that lets him continue enjoying a good life with his wife, three children, and eight grandchildren.

"In both oncology and cardiac care, I don't think I could have gotten better care from anyone, anywhere. I also feel blessed with all my family and friends praying for me."

To refer a patient for a Cardio-Oncology evaluation, or for questions, call 412-359-4744 or email Dr. Poornima at indu.poornima@ahn.org.

A-fib without blood thinners

PERMANENT DEVICE REDUCES CLOTTING RISKS

Atrial fibrillation (A-fib) can mean a lifetime of blood thinners for many patients. These medications reduce clotting risks that can lead to stroke, but they also come with challenges and potential bleeding concerns.

AHN doctors can eliminate blood thinners from some patients' lives by implanting a unique device that permanently closes the heart's left atrial appendage (LAA) and prevents blood clots from entering the bloodstream.

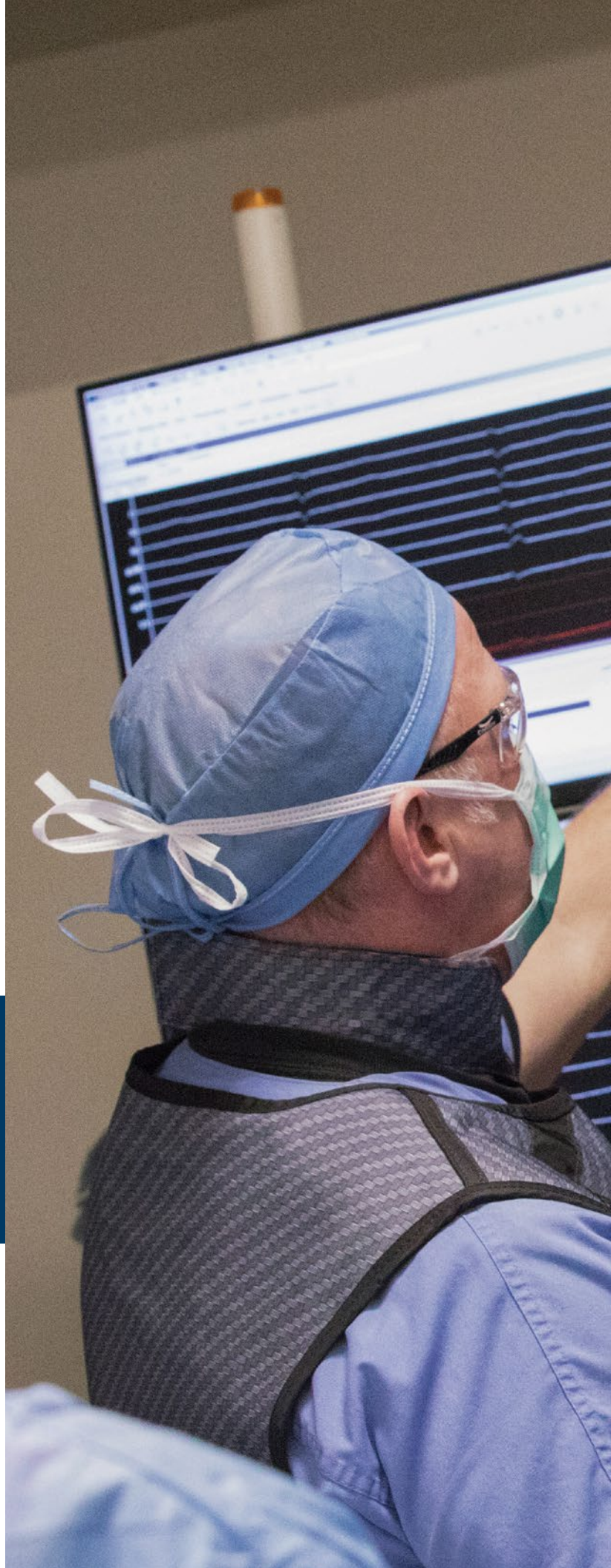
The WATCHMAN™ device is an FDA-approved therapy proven to effectively reduce the risk of stroke, without the risk of bleeding associated with the long-term use of blood thinners.[1,2]

96% **of patients could discontinue using blood thinners at 45 days.[3]**

[1]https://pubmed.ncbi.nlm.nih.gov/26088300/

[2]https://pubmed.ncbi.nlm.nih.gov/26627989/

[3]https://www.bostonscientific.com/en-EU/products/laac-system/watchman-flx/clinical-evidence.html



The WATCHMAN minimally invasive procedure can reduce stroke risk without the use of blood thinners.

A clinical trial, called the PINNACLE FLX 12-month study, followed 400 patients at 29 medical facilities in the U.S. Results showed that 96% of patients could discontinue using blood thinners at 45 days.[3]

"Some patients with A-fib are at an increased risk of stroke off blood thinners, and at an increased risk of bleeding on blood thinners," said David Lasorda, DO, director of the Allegheny General Hospital Division of Interventional Cardiology. "The WATCHMAN is an ideal option for A-fib patients who cannot take long-term blood thinners."

"The WATCHMAN is an ideal option for A-fib patients who cannot take long-term blood thinners."

— David Lasorda, DO

PLUGGING THE PROBLEM

A-fib is an irregular rhythm that comes from the top of the heart. Because blood isn't pumped out of the heart normally, it's easier for blood to pool in the LAA. Blood cells can stick together and form a clot. When a blood clot escapes from the LAA and travels to another part of the body, it can cut off blood supply to the brain and cause a stroke.

"More than 90% of clots found in the heart of A-fib patients are located in the left atrial appendage," Dr. Lasorda explained. "So, we want to close that area of the heart to prevent embolization, and we can do that with the WATCHMAN."

The WATCHMAN is a quarter-sized, marshmallow-shaped device that is collapsed into a sheath. A team that includes an interventional cardiologist and an electrophysiologist implant the WATCHMAN during a minimally invasive procedure.

Using imaging technology, the physician guides a catheter containing the device through a vein in the patient's groin, explained Electrophysiologist Amit Thosani, MD, who also performs the procedure. Once it reaches the heart, the device is deployed in the left atrial appendage to permanently close it.

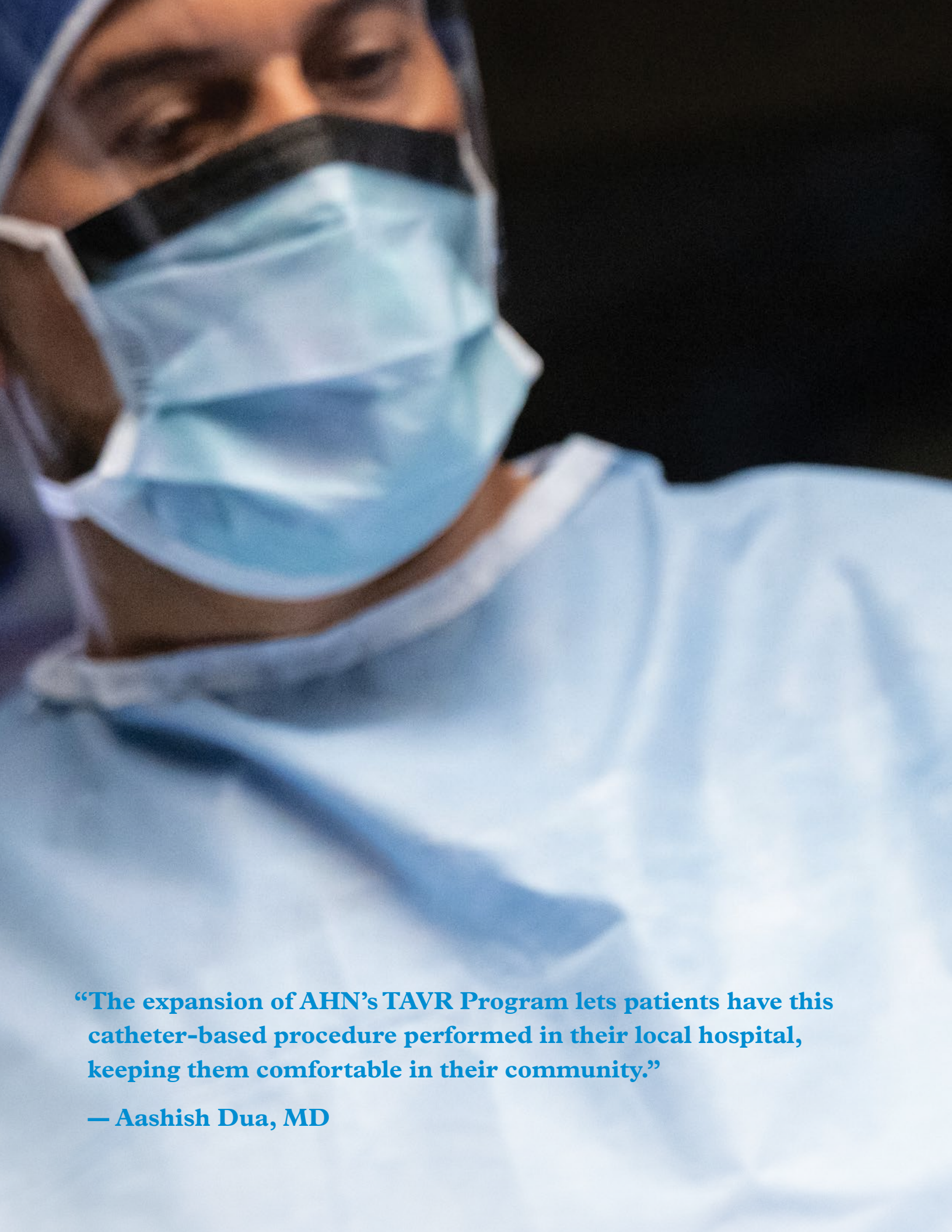
"Patients can often be discharged the same day as the procedure," Dr. Thosani said. "They continue to take blood-thinning medication while heart tissue grows over the implant to permanently close off the appendage, and patients can typically stop taking blood thinners about 45 days after the procedure."

They are prescribed aspirin and an antiplatelet medication called clopidogrel to take for five months. After that, patients continue taking aspirin on an ongoing basis.

"We have performed approximately 250 cases, and our patients are doing very well and are no longer taking blood thinners," Dr. Lasorda said.

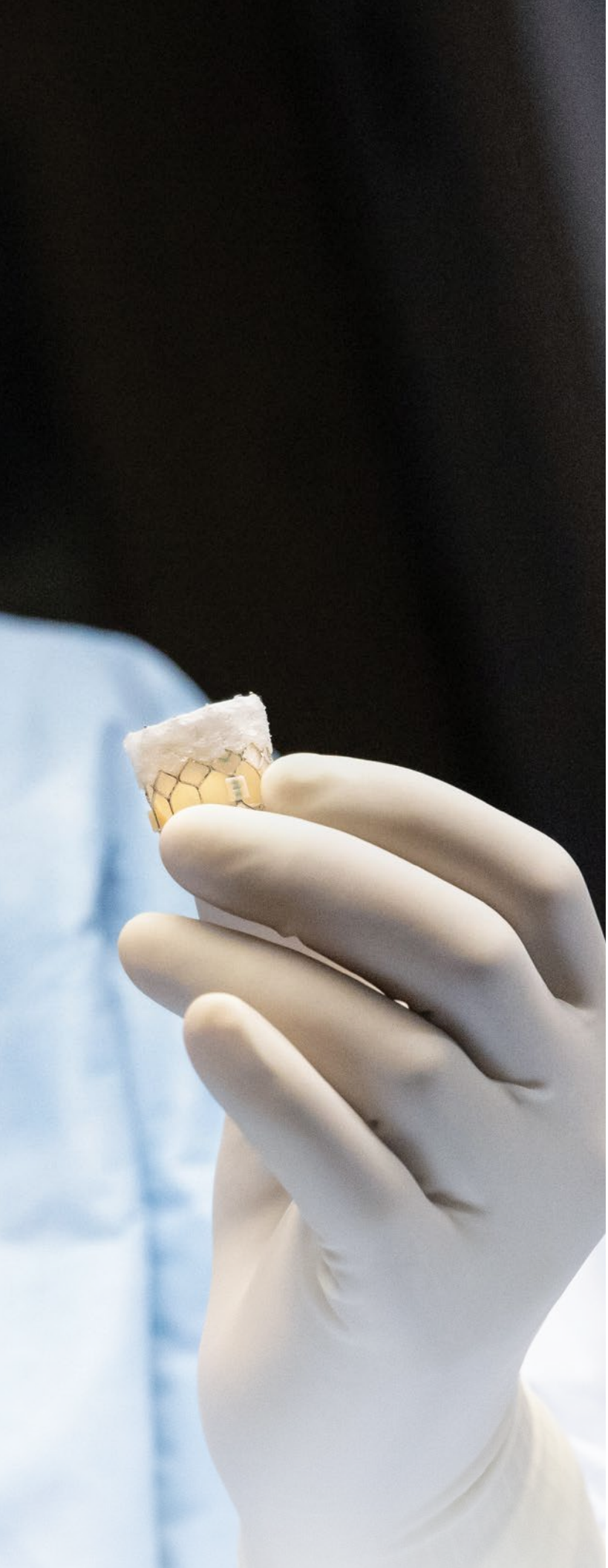
To refer a patient for WATCHMAN evaluation, call 412-359-6287.

DAVID LASORDA, DO
Director, AGH Division of
Interventional Cardiology



“The expansion of AHN’s TAVR Program lets patients have this catheter-based procedure performed in their local hospital, keeping them comfortable in their community.”

— Aashish Dua, MD



Innovation inroads

MINIMALLY INVASIVE VALVE REPLACEMENT CLOSE TO HOME

AHN heart valve specialists are performing transcatheter aortic valve replacement (TAVR) at Forbes and Jefferson hospitals so people can have highly specialized care right in their community. The minimally invasive procedure is for patients with severe aortic stenosis who need their valve replaced.

"The expansion of AHN's TAVR Program lets patients have this catheter-based procedure performed in their local hospital, keeping them comfortable in their community, in familiar surroundings near their support team," said Aashish Dua, MD, interventional cardiologist who performs TAVR at Forbes, along with cardiothoracic surgeons Pietro Bajona, MD, PhD, and Stephen Bailey, MD.

Dr. Dua went on to say, "Having that comfort of knowing you don't have to travel back and forth into the city, and you're in familiar surroundings, can help patients feel less stressed and make them more secure and confident about their care."

For decades, open-heart surgical aortic valve replacement had been the standard treatment for severe aortic stenosis. But, in the past few years, TAVR has become the new gold standard for many aortic stenosis patients.

"This is due to years of results showing equal or better patient outcomes compared to traditional surgery," said Kyung Park, MD, cardiothoracic surgeon at Jefferson. "The most important aspect is that patients should be evaluated by an experienced, multidisciplinary heart team to determine the best option for each patient."

PIETRO BAJONA, MD, PHD
Cardiothoracic Surgeon

Dr. Park performs TAVR at Jefferson, as do interventionalists Colin Slemenda, DO, and C. Michael Brown, MD.

A FEW DAYS FROM HEART SURGERY TO HOME

Aortic stenosis is a condition in which the aortic valve does not open fully due to a thickening of the valve leaflets, often caused by a buildup of calcium on the leaflets. This thickening makes it difficult for the leaflets to open and close, which decreases blood flow from the heart to the body. The condition may cause the heart to work harder to pump blood.

With TAVR, doctors use X-ray imaging and long tubes (catheters) to guide the replacement valve up to the heart through an artery in the groin. When the replacement valve is in the correct position, a balloon at the tip of the catheter locks it into place, pushing the diseased valve tissue out of the way. The replacement valve immediately takes over the job of moving blood through the heart.

"We place a catheter into an artery in the patient's groin, or through a small incision, without the need of a chest incision required during surgical aortic valve replacement," Dr. Dua said. "When we reach the heart, we insert the TAVR valve, which displaces the old valve and takes its place."

Other benefits of TAVR valves include using a minimal incision versus open-heart surgery and shorter hospital stays — typically one to two days for TAVR versus three to five days for traditional surgery. Overall recovery is shortened as well — typically two weeks versus six weeks for open-heart surgery.

"We don't need heart bypass with TAVR because the patient's heart continues beating on its own throughout the procedure," Dr. Park said. "And we often perform the procedure with conscious sedation rather than general anesthesia."

A DECADE OF EXPERIENCE AT AGH

In 2012, Allegheny General Hospital (AGH) was among the first medical centers in the U.S. to offer TAVR. Almost 10 years later, physicians at AGH have performed more than 2,000 procedures.

"When we first began performing TAVR, it was considered an alternative for patients who were too sick to withstand open-heart surgery," said Stephen Bailey, MD, co-chair of the AHN Cardiovascular Institute. "Because of the highly experienced AHN TAVR Program, where more than 2,000 patients have been treated after a dedicated process for patient evaluation and delivery of care, we can expand to our other AHN facilities."

AGH recently earned the maximum three-star rating from the Society of Thoracic Surgeons (STS) for the quality and patient outcomes of its leading cardiovascular surgery program. The hospital received the highest-level of achievement across four categories of surgery: coronary artery bypass grafting (CABG), aortic valve replacement with CABG (AVR/CABG), mitral valve surgery (MVR/r), and TAVR, placing it among the most elite cardiovascular programs within the United States and Canada.

"The STS Adult Cardiac Surgery database represents more than 90% of the hospitals that perform cardiac surgery across the country and, of those who submit for public reporting, only 5% to 8% receive a three-star rating for any one procedure. So, it's incredibly gratifying to receive distinction across the whole spectrum of cardiac surgery," Dr. Bailey said.

"Receiving top marks for four different procedures is a testament to the remarkable care delivered by our leading surgeons and the entire multidisciplinary team across the AHN Cardiovascular Institute."

To refer a patient for TAVR evaluation, call 855-828-TAVR (855-828-8287).

A simple fix with a clip

AHN REPAIRS LEAKING HEART VALVES WITHOUT MAJOR SURGERY

It's just the size of a dime, but it's stopping many patients' heart valves from leaking.

The MitraClip™ is an implantable device that clasps the valve closed to restore normal blood flow to the heart. Unlike traditional open-heart surgery, the catheter-based procedure does not require a large chest incision or a heart-bypass machine.

AHN physicians have been performing the procedure since 2014 to treat patients with mitral regurgitation, which is caused by a leaky heart valve and can seriously afflict a person's quality of life. Patients who had the MitraClip procedure, developed by Abbott Vascular, experienced less risk of mortality, had fewer hospitalizations, and felt much better than with just medication.[1]

"This procedure is now being offered not only to patients who cannot have surgery, but also to those who have increased risk with surgery," said Walter McGregor, MD, AHN cardiothoracic surgeon. "We are even offering access to the clip for patients with only intermediate surgical risk through participation in a clinical trial (REPAIR MR) as well as novel design clips that may have some advantages (CLASP trial)."

Patients recovering from traditional mitral valve surgery may take several months to regain normal physical function and activity. Typically, the MitraClip procedure allows patients

[1]Mack M, et al. COAPT: Three-year outcomes from a randomized trial of transcatheter mitral valve leaflet approximation in patients with heart failure and secondary mitral regurgitation. Presented at TCT 2019.

WALTER McGREGOR, MD
Cardiothoracic Surgeon

to go home in two days, and their symptoms start subsiding shortly after the device is deployed.[2]

A PROBLEM THAT NEEDS FIXED

Mitral regurgitation is when the mitral valve's two flaps don't close completely as the heart pumps. This causes blood to leak backward from the left ventricle into the left atrium. The heart must work harder to push blood through the body, which causes fatigue and shortness of breath.

Some patients take medications like diuretics (water pills) to curb their symptoms, but drugs won't fix the problem. Repair or replacement of the mitral valve is ultimately needed. If left untreated, up to 57% of people with a leaking valve may not survive a year.[3]

"After the MitraClip procedure, our patients continue to experience improvement in their heart function, quality of life, and ability to perform day-to-day tasks."

— Walter McGregor, MD

During the procedure, doctors access the mitral valve with a catheter that's inserted into the groin. They use an echocardiogram to guide the clip through the catheter to the affected area. The clip is attached to the two mitral valve leaflets, creating a double-barreled opening to allow blood to move forward and prevent blood from flowing backward.

"We typically discharge patients in one to three days," Dr. McGregor said. "After the MitraClip procedure, our patients continue to experience improvement in their heart function, quality of life, and ability to perform day-to-day tasks."

To refer a patient for MitraClip evaluation, call 1-855-4MITRAL (1-855-464-8725).

MitraClip results

33% reduction in mortality risk[1]

51% reduction in heart failure hospitalization[1]

[2]https://www.acc.org/latest-in-cardiology/articles/2020/03/24/16/41/mon-930-global-expand-study-contemporary-outcomes-mitraclip-acc-2020

[3]hhttps://pubmed.ncbi.nlm.nih.gov/15919238

Dr. McGregor guides the MitraClip to the heart valve.

In the news

AGH NAMED AMONG NATION'S BEST FOR MITRAL VALVE REPAIR

The American Heart Association and the Mitral Foundation recognized AGH for demonstrating superior outcomes in the surgical repair of mitral valves. The Mitral Valve Repair Reference Center Award is a joint recognition program to provide patients and referring physicians with a list of the nation's best surgeons and hospitals for mitral valve repair surgery.

While clinical guidelines recommend mitral valve repair over replacement,[1] too many patients who would benefit from repair receive replacement valves, with higher rates of death or complications within five years after surgery, according to the Mitral Foundation.

Numerous large-scale clinical outcome studies show a strong correlation between the number of cases performed by experienced mitral valve surgeons and the resultant clinical outcomes.[1] This recognition program uses volume, resource, and clinical performance measures to award these experienced hospitals and surgeons.

U.S. NEWS RATES AGH A BEST HOSPITAL FOR TAVR

U.S. News & World Report, the global authority in hospital rankings, rated AGH as the only high-performing transcatheter aortic valve replacement (TAVR) center in the region.*

TAVR is a procedure performed to improve blood flow to the heart for patients with a narrow aortic valve or a valve that is not functioning properly (aortic stenosis). Initially, this minimally invasive surgery was performed as an alternative for patients who were not good candidates for traditional open-heart aortic valve surgery, but TAVR is now often recommended for low-risk patients as well.

U.S. News & World Report evaluates how well hospitals perform TAVR, using data such as survival, prevention of stroke, number of patients treated, and more. Hospitals received one of three ratings: high performing, average, or below average. Hospitals that earned a high-performing rating were significantly better than the national average.

In addition, U.S News & World Report also ranked AGH as a high-performing hospital in Heart Failure, Heart Attack Care, Aortic Valve Surgery, and Abdominal Aortic Aneurysm Repair.

[1]www.mitralfoundation.org/reference-center-award

*Region refers to AHN's primary and secondary service areas of Allegheny, Armstrong, Beaver, Butler, Washington, and Westmoreland counties; Erie, Corry, Westfield, Jamestown, Meadville, Greenville, Titusville, and Warren counties; and Monongalia, Ohio, and Marshall counties in West Virginia.

AHN WELCOMES NEW SPECIALISTS

Tharian Cherian, MD

Dr. Tharian Cherian is an electrophysiologist who specializes in treating arrhythmia, atrial fibrillation, ventricular tachycardia, and heart device placement and management.

He earned his medical degree from the University of Chicago in Illinois, and he completed a residency at Stanford University in California. Dr. Cherian also completed a fellowship in electrophysiology at the University of Pennsylvania in Philadelphia.

Abdullah Haddad, MD

Dr. Abdullah Haddad is a cardiologist specializing in the diagnosis and treatment of heart disease, congenital heart defects, coronary artery disease, and heart failure.

He earned his medical degree from the University of Aleppo Faculty of Medicine in Aleppo, Syria. Dr. Haddad completed his fellowship in cardiovascular research at the Mayo Clinic in Rochester, Minnesota, and his cardiovascular fellowship at Temple University Hospital in Philadelphia, Pennsylvania.

Joshua R. Silverstein, MD, FHRS

Dr. Joshua Silverstein is an electrophysiologist who specializes in treating congenital heart disease and defects, coronary artery disease, heart failure, and arrhythmia.

He earned his medical degree from Boston University School of Medicine in Massachusetts and completed a residency at Yale New Haven Hospital in Connecticut. Dr. Silverstein also completed fellowship training in cardiovascular disease at Brown University, and fellowship training in electrophysiology at Harvard University.

AHN CARDIOVASCULAR INSTITUTE

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ERIE: 814-453-7767

Doctors.AHN.org/referral | AHN.org/CVI

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