

# NATIONALLY RECOGNIZED HEART AND VASCULAR CARE

Founded as a Christian ministry of healing, Baylor Scott & White Health promotes the well-being of all individuals, families and communities.

**Mission**

**Strategies**

Health  
Experience  
Affordability  
Alignment  
Growth

We serve  
faithfully  
  
We act  
honestly  
  
We never  
settle  
  
We are in  
it together

**Values**



To be the trusted leader, educator and innovator in value-based care delivery, customer experience and affordability.

**Ambition**



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**Dear Readers:**

On behalf of our Board of Managers and our medical staff leadership, we are pleased to provide you with the fiscal year 2021 outcomes report for Baylor Scott & White Heart and Vascular Hospital – Dallas and Fort Worth. Annually, since the 2002 opening of our Dallas hospital, the first dedicated heart and vascular hospital in North Texas, we publish our fiscal year-end results, quality indicators and volumes. We look forward to sharing our accomplishments with physicians, clinicians, administrators, and all who are interested.

The information includes overviews of programs and services, as well as data reflective of the Dallas and Fort Worth campuses where we collaborate closely with Baylor University Medical Center, a part of Baylor Scott & White Health, on our Dallas campus, and in Fort Worth with Baylor Scott & White All Saints Medical Center – Fort Worth. Particularly in fiscal year 2021, as the pandemic continued, we came together to support all of our front lines to provide access and care for the community. We remain “In it together!”

As a part of Baylor Scott & White Health, the largest not-for-profit healthcare organization in Texas, we work in tandem with members of our medical staff and all clinicians to deliver high-value quality care and maintain excellence in the patient experience. Many awards and recognitions we received during the fiscal year are a testament to this collaboration including:

- 5-Star Rating from Centers for Medicare & Medicaid Services for Patient Safety
- Grade A from The Leapfrog Group in Spring 2020 for the 12th consecutive reporting period
- Healthgrades Patient Safety Excellence Award™ and Coronary Intervention Excellence Award™
- Press Ganey® Guardian of Excellence Award for Patient Safety
- U.S. News & World Report recognition as High Performing in Abdominal Aortic Aneurysm, Heart Failure and Heart Attack

Additional awards and accolades are included within the pages of this report.

A highlight for both our Dallas and Fort Worth campuses remains the commitment to advancing cardiovascular care through research and clinical trials. Through Baylor Scott & White Research Institute and Soltero Cardiovascular Research Center, patients have experienced the opportunity to be on the forefront of research into new technology and treatment options. Being nationally acclaimed as innovators in cardiovascular care is a hallmark for our medical staff and teams. A listing of the clinical trials for the fiscal year is included in this report.

If you have feedback on this book, please reach out via [Navigator@BSWHealth.org](mailto:Navigator@BSWHealth.org).

As you will read, the graduate medical education programs for general cardiology, interventional cardiology, electrophysiology, and heart failure, as well as vascular and cardiothoracic surgery remain strong. We appreciate the opportunity to work with young careerists who will shape the future of cardiovascular care. They have demonstrated great resilience in the face of the pandemic.

At the end of fiscal year 2021, our Chief Medical Officer, Kevin Wheelan, MD, who, for the past 20 years provided unwavering leadership with dedication and passion, retired. We celebrate his accomplishments and the abundance of his contributions to many clinicians and patients. Personally, I thank him for his vision and relentless pursuit of quality, safety and service. These are foundational to our culture and led Baylor Scott & White Heart and Vascular Hospital – Dallas and Fort Worth to become a nationally recognized heart and vascular hospital. We wish him well in his retirement years.

We are proud of our growth over the past years and sincerely appreciate the confidence that many in North Texas have placed in the services and care provided in both Dallas and Fort Worth. In fiscal year 2022, we look forward to expanding cardiovascular care in collaboration with Baylor Scott & White Medical Center – Waxahachie for this growing region of North Texas.

For those who have referred patients to us, thank you for the trust you have in our ability to care for your patients. To the employers who have worked closely with us on maximizing the value of healthcare services, we appreciate our collective ability to focus on value while maintaining quality care and exceptional patient experience. To our patients and those who may become our patients, we are resolute in our commitment to you; bringing you excellence in the cardiovascular programs and services provided.

If I can be of service, please do not hesitate to contact me at [Nancy.Vish@BSWHealth.org](mailto:Nancy.Vish@BSWHealth.org).

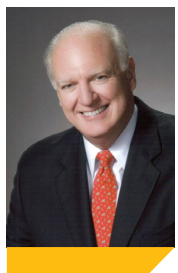


*Nancy Vish*

**Nancy Vish, RN, PhD, NEA-BC, FACHE**

President and Chief Nursing Officer  
Baylor Scott & White Heart and Vascular Hospital  
Dallas and Fort Worth

Baylor Scott & White Heart and Vascular Hospital – Fort Worth is a department of Baylor Scott & White Heart and Vascular Hospital – Dallas. Notice Regarding Physician Ownership: Baylor Scott & White Heart and Vascular Hospital – Dallas is a hospital in which physicians have an ownership or investment interest. The list of the physician owners or investors is available to you upon request. Physicians provide clinical services as members of the medical staff at one of Baylor Scott & White Health’s subsidiary, community or affiliated medical centers and do not provide clinical services as employees or agents of those medical centers.



A year ago, I wrote about 2020 being a year like no other, with the assumption that when I wrote again for 2021, this would be over. Yet I now know another definition of the word surge,

one I had not contemplated, yet one that we all now fully understand. Notwithstanding the surge, effective, safe, quality, compassionate healthcare at Baylor Scott & White Heart and Vascular Hospital - Dallas and Fort Worth continues. Throughout this publication, you will read about many of the great advances which we see.

I think about the direction we have to love our neighbor as ourselves, and I see this carried forward in every corridor, conference room, and elevator I enter. Carried forward by those wearing the Baylor Scott & White Heart and Vascular Hospital badge as well as by others, both patients and visitors. For that, I am grateful. Our mission continues, and those contributing to and accomplishing that mission are all the more amazing for doing so in the face of such difficulty and headwinds.

And as I write this, I hope you will join me in thanking all those who are on the front lines of healthcare and all of those who support them.

Gratefully and humbly,

**Michael L. Graham, JD**  
Chair, Board of Managers  
Baylor Scott & White Heart and Vascular Hospital - Dallas and Fort Worth



While most will agree that fiscal year 2021 was challenging as we all navigated the pandemic world, the healthcare provider team at Baylor Scott & White Heart and Vascular Hospital in both Dallas and Fort Worth should be proud of the collective strength and dedication to quality and safety demonstrated throughout the year. They have managed through COVID-19 at its highest level in our Dallas and Fort Worth area while continuing to offer safe, uninterrupted cardiovascular care access to patients. Steady through it all, the heart and vascular teams persisted in maintaining

a commitment to our organizational values to serve faithfully, act honestly, never settle and realize—we are all in this together.

Now entering fiscal year 2022, we are beginning the 20th year of operations for Baylor Scott & White Heart and Vascular Hospital. The advancement in technology and level of innovation in cardiovascular care never ceases to amaze me as I reflect on these past two decades of nurturing the first dedicated heart and vascular hospital in North Texas grow into a nationally recognized heart and vascular care hospital. We have maintained a level of excellence in clinical care and patient outcomes that places the hospital at the highest Centers for Medicare and Medicaid rating of 5-Stars. For more on recognitions, see the Awards and Accolades section.

Research and involvement in clinical studies remain a foundation of our organization and for our medical staff members. It is key to providing advanced treatment options for our patients. In fiscal year 2021 alone, the number of cardiovascular research studies on the Dallas and Fort Worth campus numbered more than 65 with a total of more than \$5.9 million in research grants. This allows patients access to participation in clinical research studies on the latest generation in cardiovascular devices and treatment options. It is a part of our history to be—and to always remain—at the forefront of recent advancements in cardiovascular care.

A cornerstone to our program continues to be the fostering of the next generation of cardiovascular clinicians. In fiscal year 2021, we expanded our fellowship training programs. We collaborated with the Dallas VA Medical Center to offer clinical support and training on the Dallas VA campus.

Reflecting on the past decades, and observing our fellows in training, I am very much encouraged for the future of cardiovascular care not only at our Baylor Scott & White Health locations, but for all patients. These young careerists are truly inspiring.

My personal goal of helping Baylor Scott & White Heart and Vascular Hospital achieve its national reputation as a center of cardiovascular excellence has been achieved. And, now, after 35 years of clinical practice, I am proudly passing the leadership role as Chief Medical Officer to well-qualified Dr. Jeffrey Schussler. Together with the dedicated team of healthcare professionals, I am confident there will be another twenty-plus years of striving for excellence and remaining at the forefront of cardiovascular care.

For all who open this book and learn about our programs and services, if we can be of service to you or your patients, please do not hesitate to reach out.

My best wishes to all and for the continued success,

**Kevin Wheelan, MD, FACC, FHRS**  
Chief Medical Officer | Baylor Scott & White Heart and Vascular Hospital - Dallas and Fort Worth



# 46,315\*

## Total admissions

(Dallas & Fort Worth, FY21)



### 7,590

Total cath lab cases\*  
(Dallas & Fort Worth)



### 6,939

Total EP procedures\*  
(Dallas & Fort Worth)



### 2,496

Total vascular surgeries\*



### 34,083

Total non-invasive procedures\*  
(Dallas & Fort Worth)



## Press Ganey®

for patient satisfaction\*  
(Dallas & Fort Worth through July 2021)



## 5 Stars

5 out of 5 stars from CMS  
for patient safety\*  
(Dallas & Fort Worth through July 2021)



## Grade 'A'

LeapFrog Group rating\*  
(Spring 2021)

## Healthgrades Excellence Awards



Patient Safety Excellence Award™ Healthgrades  
(2020 - 2021)



Coronary Intervention Excellence Award™ Healthgrades  
(2020 - 2021)

\*Baylor Scott & White Heart and Vascular Hospital - Dallas and Fort Worth





**Public reporting of healthcare quality data is available to the public with in-depth discussions about methodologies. Information can be found at:**

- The Joint Commission Performance Measurement Initiative: [QualityCheck.org](https://www.qualitycheck.org)
- CMS via Hospital Compare: [Medicare.gov/HospitalCompare](https://www.Medicare.gov/HospitalCompare)

**Registries and data sources involved in citations for the fiscal year 2021 outcomes for heart and vascular data include:**

- National Cardiovascular Database and Registry (NCDR)
  - Cath PCI Registry
  - LAAO Registry
  - STS/ACC TVT Registry
  - Chest Pain - MI Registry
- Society for Thoracic Surgeons (STS)
  - Adult Cardiac Surgery Database
  - General Thoracic Surgery Database
  - Intermacs Database
- Vascular Quality Initiative (VQI)
  - Endo AAA Repair
  - Open AAA Repair
  - Thoracic and Complex EVAR
  - Carotid Artery Stent
  - Carotid Endarterectomy
- American Heart Association (AHA)
  - Mission: Lifeline (GWTG)
    - > Coronary Artery Disease (CAD)
    - > Stroke

**Additional data sources include:**

- Centers for Medicare & Medicaid Services (CMS)
- Press Ganey® Associates
- Progress CTO - Prospective Global Registry for the Study of Chronic Total Occlusion Intervention
- Baylor Scott & White Quality and Healthcare Improvement

Baylor Scott & White Heart and Vascular Hospital leadership understands that quality data is complex. Various databases or registries use a variety of timeframes for data compilation and calculate benchmarking using various methodologies. Together with physicians on the medical staff, the leadership of the hospital recognizes that potential referring physicians and healthcare consumers may use this information to help make informed decisions.

Registries, governmental databases and private benchmarking organizations are all taken into account when outcomes are reviewed. A sampling of the outcomes measures is included on the next few pages along with the infection prevention and safety plan key elements.

## Centers for Medicare and Medicaid

Centers for Medicare & Medicaid Services (CMS) publicly launched the hospital Quality Star Rating System in mid-2016 with the goal of improving the usability of existing quality measurements on the website, Medicare.gov/HospitalCompare, as well as improving the ability of consumers to make informed and important healthcare decisions.

While the ratings were developed to encompass a broad array of quality measures to provide consumers with a simple overall rating generated by combining multiple dimensions of quality into a single summary score, the data is often a year or 18 months old.

### Overall hospital rating\* 5 out of 5 Stars



Hospitals that earn a CMS 5-Star Rating generally have better scores in the heavily weighted categories, i.e., mortality, patient experience, safety, and readmission. Five stars is the highest attainable rating in the report. CMS created the 5-Star Quality Rating System to help consumers, their families and caregivers compare nursing healthcare organizations more easily and to help identify areas where patients and families might wish to ask questions. Only 455 hospitals out of 4,586 total received 5-Stars.

### Top 10th percentile - Magnet® hospital comparison group

Baylor Scott & White Heart and Vascular Hospital remains in the **top 10th percentile** for all hospitals in the Magnet Hospital Comparison Group for the prior four quarters pertaining to:

- Catheter-associated urinary tract infections per 1,000 catheter days
- Percent of surveyed patients with hospital acquired pressure injuries
- Percent of surveyed patients with hospital acquired pressure injuries stage 2 and above
- Hospital acquired pressure injury - medical device related
- C. diff rate - New event, healthcare acquired per 1,000 patient days
- MRSA rate - New event, healthcare acquired per 1,000 patient days

\*\*Source: NDNQI Q1 2021

## Leapfrog Group assigns “A” to hospital for patient safety



Baylor Scott & White Heart and Vascular Hospital - Dallas received its twelfth consecutive “A” grade. The Leapfrog Group, a nonprofit organization committed to driving quality, safety and transparency in the US healthcare system, assigned the “A” rating for its commitment to reducing errors, infections and accidents that can harm patients. According to the Leapfrog Group’s information, “Hospitals that earn top marks nationally in the Leapfrog Hospital Safety Grade have achieved the highest safety standards in the country.”

### Readmission

Unplanned 30-day readmission rates are a marker of quality patient care across many disciplines. Baylor Scott & White Heart and Vascular Hospital focuses on all-cause, all-condition readmission rates as well as readmission rates for disease-specific cohorts (vascular surgery, AMI, CHF).

Efforts to reduce readmissions start with our pre-admission call. Patients receive daily rounding by a multidisciplinary team. At a weekly meeting of a readmission prevention team, a multidisciplinary group of clinicians, plans for high-risk patients are developed. The team also reviews opportunities and lessons learned from any patient who has an unplanned return to the hospital. The team works with post-discharge organizations (including home health agencies and skilled nursing facilities) to build and maintain relationships focused on quality outcomes and smooth transitions.


All of our patients receive a call from our dedicated Discharge Care Call RN 24 to 72 hours post-discharge to assure patients are transitioning home as expected and their needs have been addressed. A review of discharge instructions, new medications and post-discharge follow-up appointments occurs.

**7.9%** All-cause readmission rate (FY21)

*Baylor Scott & White Health recognizes teams across the organization that demonstrate exceptional results from a quality or process improvement initiative reducing clinical practice variation and improving patient outcomes. The annually bestowed Bill Aston Exemplary Project Award was presented to the Baylor Scott & White Heart and Vascular Hospital team involved in efforts to reduce vascular surgery readmissions.*

## Patient safety and infection prevention

Annually, the team at Baylor Scott & White Heart and Vascular Hospital develops a combined patient safety and quality plan. The plan is presented to the board of managers and medical staff leadership for review and approval. All patient safety measures and key quality indicators are regularly reviewed at all levels. Employees are engaged in the hospital’s commitment to “Zero Harm” and hear from the president and chief nursing officer, Nancy Vish, PhD, RN, NEA-BC, FACHE, no less than quarterly about the results of patient safety initiatives and safety goals. The Patient Safety Officer works with leadership and staff to promote a “Zero Harm” culture.

Hospital-acquired condition performance (FY21)	Target	Result	
Reduction of hospital onset C. diff infection	SIR 0.43555	SIR 0.00	MET
Reduction of hospital onset MRSA bacteremia	SIR 3.73300	SIR 0.00	

- Includes all inpatient NHSN operative procedures in patients >+18 years of age
- SIR is only calculated if number is >+1. Lower bound of 95% Confidence Interval only calculated if infection count >0
- The number of predicted events is calculated based on national aggregate NHSN data. Document containing the list of risk factors used in risk adjustment for each procedure is available at: [CDC.gov/NHSN/2015Rebaseline/Index.html](https://www.cdc.gov/nhsn/2015Rebaseline/Index.html)
- Excludes all Superficial Incisional SSIs as well as Deep Incisional Secondary (DIS) SSIs
- Includes procedures and associated SSIs that are reported with either primary or other than primary closure technique
- Excludes SSI detected on follow-up admission to a different facility (RO) and SSIs detected through post-discharge surveillance efforts (P)
- Source of aggregate data: NHSN SSI Data June 2021

### FY21 and COVID-19

The health and safety of our patients and team members continue to be our top priority. As we remain dedicated to our Mission during the unprecedented time of COVID-19, together with Baylor Scott & White, during the pandemic, hospital leadership announced new preventive safety measures and innovative care options as well as educational tools for patients grounded in the COVID-19 Safe Care plan.



#### COVID-19 Safe Care plan objectives:

- Educate our communities about the many ways Baylor Scott & White Health is working to safeguard their health and well-being, protecting them from COVID-19
- Demonstrate how Baylor Scott & White Health is leading the state and paving the way in both virtual and in-person care options throughout the pandemic
- Reinforce there are potential unintended consequences for delaying care
- Demonstrate the commitment for educating our communities about the many ways we are working to safeguard our patients’ health and well-being—as well as that of our caregivers—from COVID-19. New measures and protections are in place across our hospitals, surgery centers and clinics, in accordance with CDC guidance and recommendations by our clinical experts

#### Plan elements include:

- COVID-19 testing of patients deemed appropriate through individual case review prior to in-hospital surgeries; patient swabs collected via convenient drive-thru locations
- Where possible, virtual waiting rooms, allowing patients and loved ones of hospital or surgery center patients to receive updates about their care via calls and text messaging, minimizing time in common areas
- Virtual care options provided to patients before and after surgeries and procedures when appropriate, simplifying the experience
- Masking of patients, approved visitors and staff in hospitals, surgery centers and clinics
- Enhanced cleaning and touch-free protocols in hospitals, surgery centers and clinics, including UV-light disinfection and paperless registration
- COVID-19 home monitoring digital care journey, enabled through the MyBSWHealth app or website, offered to those diagnosed with COVID-19 so there is support by care teams while quarantined

For more information about our COVID-19 Safe Care plan: [BSWHealth.com/SafeCare](https://www.bswhealth.com/SafeCare) or 888.4.BSW.SAFE.



#### Healthgrades - Cardiac and Patient Safety -

The hospital achieved the Healthgrades Coronary Intervention Excellence Award™ for the second consecutive year and the 2020 Patient Safety Excellence Award™. This distinction places the hospital among the Nation’s top 10% of hospitals evaluated by Healthgrades, the leading resource that connects consumers, physicians and health systems. Baylor Scott & White Heart and Vascular Hospital - Dallas also received 5-Stars for Treatment of Heart Attack and Pacemaker Procedures for the second consecutive year.



#### U.S. News & World Report - High Performing Hospital -

In its 2021 - 2022 “America’s Best Hospitals” list, U.S. News & World Report recognized Baylor Scott & White Heart and Vascular Hospital - Dallas by rating it High Performing in Abdominal Aortic Aneurysm, Heart Failure and Heart Attack. For cardiovascular services, Baylor University Medical Center was rated High Performing in Aortic Valve Surgery, Heart Bypass Surgery and Heart Failure.



#### Mission: Lifeline® /Get With The Guidelines Gold-Plus and Gold Recognition -

The hospital received Gold-Plus recognition as a STEMI Receiving Center and Gold for NSTEMI care as outlined by the American Heart Association’s quality indicators for patients who have had a severe heart attack. The hospital met specific criteria and standards of performance for quick and appropriate treatment of patients by providing emergency procedures to re-establish blood flow to blocked arteries when needed.



#### Highest star rating from the 2020 Vascular Quality Initiative (VQI) Participation Awards -

Announced in April 2021, through the participation of the Vascular Quality Initiative® Baylor Scott & White Heart and Vascular Hospital - Dallas received the 2020 VQI Participation Award with a 3-Star rating, the highest “star rating” from the VQI. This is the fifth consecutive year the hospital has received 3-Star recognition.



#### Women’s Choice Award® - Patient Safety and Heart Care -

The hospital has been named one of America’s Best Hospitals for Patient Safety and Heart Care by the Women’s Choice Award® (WCA). These awards signify that the hospital is in the top 1% of 4,542 US hospitals offering heart care and for patient safety in safe surgery practices and lower rates for complications and infections.



Leadership at Baylor Scott & White Heart and Vascular Hospital - Dallas and Fort Worth, collaborates with the nationally recognized vendor, Press Ganey® Associates, Inc., to provide national, regional and specialty patient satisfaction measurements across the care continuum.

In early fiscal year 2021, Baylor Scott & White Heart and Vascular Hospital won the Guardian of Excellence® for Patient Experience in HCAHPS for reaching the 95th percentile for each reporting period for the award year.



The team works collaboratively on activities to improve the experience from prior to arrival at the hospital through post-hospital discharge and rehabilitation.

Prior to hospital arrival, calls are completed to patients in order to review procedure information and help set expectations. Online education is offered to patients scheduled for a procedure. This education was specifically developed to assist the patient with a better understanding of the scheduled procedure and the post-procedure care. Survey results have indicated that those patients who have viewed the pre-hospital stay information enter the hospital less stressed and better informed.

To assist patients and family members during their stay, hospital volunteers provide comfort and assist in communication between the procedural areas and the family waiting rooms. While traditional face-to-face interaction was restricted, the hospital adopted virtual waiting rooms, a part of Baylor Scott & White's COVID-19 Safe Care plan, where updates were given over the phone to the patient's family members. Most of the hospital volunteers are former cardiac patients and have a passion for their work.

In the spirit of continuous improvement, patients may have experienced senior leaders "rounding." These visits obtained real-time feedback from patients and family members. Helping with the reduction of stress, visitors may have experienced visits from certified pet therapy dogs.

HCAHPS survey results overall rating:\*

**98th** percentile

\* The 98th percentile equates to 90.6% of patients rated on a scale of 0 to 10, a 9 or 10 for the Dallas campus. Timeframe: FY21

From the on-demand food and nutritional services to the assistance provided to patients who wish to visit with a chaplain, our teams strive to make the patient's experience positive. Post discharge patients and caregivers received phone calls to check in on recovery, answer questions and provide additional resource information if needed. The scores identified in this section reflect the individual fiscal year 2021 outcomes of the respective patient populations for the Dallas and Fort Worth campuses.

**Patient experience activities the team focused on during this time included:**

- Use of "Your Passport to Center for Valve Disorders" - a special patient itinerary for their journey through the Center for Valve Disorders - Dallas
- Fast Track process for Ambulatory Surgery patients to expedite patient registration upon arrival to the hospital
- Creation of Tuck and Tea packets (includes ear plugs, eye mask, lavender hand wipes, lip balm) to help facilitate rest and healthy for patients
- Daily multidisciplinary patient rounding provides safe, quality and timely coordination of care across multiple disciplines.

**Hospital Compare Public Report\***

Patient satisfaction	Description	Top Box State average	Top Box National average	Top Box BSWHVH*
Willingness to recommend the hospital	Patients who reported "yes" they would definitely recommend the hospital	74%	72%	<b>89%</b>
Communication with nurses	Patients who reported that their nurses "always" treated them with courtesy and respect	88%	87%	<b>92%</b>
Communication with doctors	Patients who reported that their doctors "always" treated them with courtesy and respect	89%	88%	<b>90%</b>
Overall rating of hospital	Patients who gave the hospital a rating of 9 or 10; on a scale from 0 to 10, 10 being highest	75%	73%	<b>87%</b>
Communication about medicines	Patients who reported that staff "always" explained a medicine before giving it to them	68%	66%	<b>71%</b>
Care transitions	Patients who "strongly agree" they understood their care when they left the hospital	55%	54%	<b>63%</b>

All indicators are **better** than state and national averages

\*Hospital Compare Public Report - can be found at [medicare.gov/care-compare](https://www.medicare.gov/care-compare). Data includes discharges January 2019 - December 2019.

**Presentation provides others with "best practice" at virtual national conference**

During the November 2020 Press Ganey Client Conference, Baylor Scott & White Heart and Vascular Hospital - Dallas' Director of Nursing, Robert Williams, MBA, BSN, RN, CSSBB, and Manager of Service Excellence and Patient Experience, Michelle Senson, MBA, BSN, RN, NE-BC, presented on the methodology used to help facilitate a successful implementation of a new electronic health record (EHR). The leadership team at Baylor Scott & White Heart and Vascular Hospital helped develop the staff's emotional intelligence as a way to effectively minimize changes in patient experience scores during the implementation of the EHR as well as as to support the transition facility-wide. The presentation also provided information on the importance of emotional and social intelligence in daily work. Experiences were shared on the ways staff can assess stress coping mechanisms as well as the vital techniques imperative to sustaining a positive attitude during a change of this magnitude.

**Patient satisfaction metrics reported by Press Ganey\***

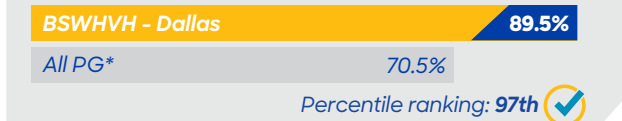
**Outpatient survey results** (Mean FY21)  
Question: Likelihood to recommend



**Ambulatory surgery survey results** (Mean FY21)  
Question: Likelihood to recommend



**HCAHPS\* survey results** (Mean FY21)  
Question: Likelihood to recommend



Communication with physicians



Communication with nurses



**HIGHER** than the All Press Ganey Hospital Mean\*

\*Key to satisfaction measures  
Time frame:.....Fiscal year 2021 (July 1, 2020 - June 30, 2021)  
Measurement:.....Mean score  
BSWHVH:.....Baylor Scott & White Heart and Vascular Hospital  
All PG:.....Comparison group of all hospitals in Press Ganey database  
HCAHPS:.....Hospital Consumer Assessment of Healthcare Providers and Systems  
CMS:.....Centers for Medicare & Medicaid Services



RN/direct patient care retention:

88%

All employee retention rate (Baylor Scott & White Heart and Vascular Hospital):

>87%

Clinical team members with one or more national certifications:

50%

People survey – all employee engagement score:

87%

Reimbursements for tuition/certifications (FY21):

>\$188K

Our people make the hospital great. All employees develop a commitment statement that summarizes their reason for being in their role and giving their best to patients, families and each other. Working closely with physicians on the medical staff and volunteers who graciously give their time, there is a strong sense of pride for the reputation of being a nationally recognized hospital specializing in heart and vascular care and a choice for many clinicians and patients.

RNS holding BSN or higher degree

>90%

Fostering a culture of continuous learning is important to the leaders of Baylor Scott & White Heart and Vascular Hospital. Employees have opportunities to grow in professional development by advancing their technical degrees and certifications or achieving a doctorate in a variety of related programs. Several leaders have participated annually in the Southern Methodist University (SMU) Cox School of Business Executive Leadership Training Program.

Emotional and spiritual support are important for both patients, as well as the hospital team. The hospital maintains a dedicated full-time chaplain for cardiovascular patients, as well as assisting team members during a stressful situation.

The culture at Baylor Scott & White Heart and Vascular Hospital is one that encourages all employees to value every role and every position. Not a single recognition day for one discipline is celebrated. Annually, the entire team celebrates “Partners in Care Week: which signifies that we are “all in it together.”

**Volunteers: A part of the team**

Caring Hearts® volunteers are a part of the team providing emotional support and timely communication to patients. The volunteers have experienced heart issues or are a family member of a cardiac patient and are valuable to those who may be experiencing heart events for the first time. These volunteers provide family members with updates during their loved one’s procedures and recovery process. Additionally, Caring Hearts volunteers often visit patients and their family members pre-procedure to answer questions and help reduce anxiety that may have been present.

**ANCC Magnet®**

Baylor Scott & White Heart and Vascular Hospital attained Magnet® recognition for the third consecutive time in 2017. This third-time designation granted by the American Nurses Credentialing Center (ANCC) signifies that the hospital is one out of only 36 hospitals in Texas to achieve the third-time designation. The application for fourth time designation was submitted and the hospital will be surveyed mid-fiscal year.



Raymond Ornelaz has been a Caring Hearts® volunteer for more than a decade.

According to the ANCC, 452 US healthcare organizations out of over 6,300 US hospitals have achieved Magnet recognition. In addition, approximately 34% of Magnet-recognized organizations that have attempted three or more designations have been successful.

This recognition is a testament to the hospital leadership’s continued dedication to high-quality nursing practice as the Magnet Recognition Program® distinguishes healthcare organizations that meet rigorous standards for nursing excellence. This credential is the highest national honor for professional nursing practice. To achieve initial Magnet recognition, organizations must pass a rigorous and lengthy process that demands widespread participation from leadership and staff. This process includes an electronic application, written patient care documentation, an on-site visit, and a review by the Commission on Magnet Recognition. Healthcare organizations may reapply for Magnet recognition every four years based on adherence to Magnet concepts and demonstrated improvements in patient care and quality. The team will again welcome surveyors in fiscal year 2022.

**Shared Governance**

Hospital leadership believes in the Shared Governance model, which empowers employees to have a voice and become engaged in decision-making opportunities within the hospital. This model is grounded in a framework of partnership, equity, accountability and ownership. Shared Governance has been proven to create an environment conducive for patient-centered care and improved patient safety with the use of evidence-based clinical practice.

**The Shared Governance councils include:**

- Clinical Practice Council
- Professional Development Council
- STARRS – Service, Training, Accountability, Recruitment, Retention and Satisfaction
- BRAIN (Bridging Research and Innovation) – Research Council
- Patient Experience Council
- Patient Education Council
- Electronic Health Record Council



The leadership teams at Baylor Scott & White Heart and Vascular Hospital – Dallas and Fort Worth are committed to the mission of giving back to the community by providing health screenings and preventive health education. Community outreach also means informing and educating the broader community, identifying neighborhoods in need. It leads to collaboration with civic organizations, city government departments and churches who strive to help improve community health.

*Founded as a Christian ministry of healing, Baylor Scott & White Health promotes the wellbeing of all individuals, families and communities.*

Every three years, Baylor Scott & White Health completes a Community Health Needs Assessment in every region where a Baylor Scott & White facility is located. As part of the Dallas and Fort Worth metropolitan health communities, the assessment reports for Baylor Scott & White Heart and Vascular Hospital guide many of the outreach initiatives for hospital leaders in their respective markets.

### Community needs identified and associated action items in fiscal year 2021 include:

- Community health education and screenings for the under-insured and uninsured persons in the service area.
- Exposure to various careers in healthcare provided to teens and college-age students through several formalized programs.
- Community sponsorship monies are distributed to programs and agencies that help provide access to care for middle to lower socioeconomic groups and organizations fostering heart-healthy lifestyles.
- Spanish-language health education is available upon request, addressing the prevention and risk factors for diabetes and cardiovascular disease.

### Wellness and screening events

The Watson Health Heart Disease Estimates identified hypertension as the most prevalent heart disease diagnosis in much of the greater service area. Whether a church requested heart health information for an audience of 20 or 200, Baylor Scott & White Heart and Vascular Hospital teams in Dallas and Fort Worth accept opportunities to provide much needed hypertension education and blood pressure screenings, especially in underserved areas. During fiscal year 2021, an innovative approach to pandemic times included a “drive-by” health fair at three area recreation centers. Heart-healthy information, including hypertension education materials, were provided. Hands-only CPR education has also been a mainstay in community outreach activities. At area employers, churches, police departments, and school districts, hospital representatives provided hands-only CPR instruction in accordance with approved guidelines.

The team will continue to work with area churches, employers and various not-for-profit organizations and schools as in-person events return.



### Baylor Scott & White vaccination hubs

In a mission to fight coronavirus in our communities, employees at the hospitals volunteered their time at COVID-19 vaccination hubs in Dallas and Tarrant Counties. Volunteers were able to help with clinical duties, including administering the vaccine, as well as non-clinical duties, such as wayfinding and sanitizing, providing a safe and efficient experience for our community members.

### Promoting healthcare careers

Baylor Scott & White Heart and Vascular Hospital – Dallas believes it is important to provide opportunities for youth to consider healthcare careers. The Community Health Needs Assessment indicated an opportunity to improve awareness for the broad variety of healthcare careers. Improving awareness and exposure to these careers, specifically with at-risk youth, may lead to improved socioeconomic futures for families.

Throughout the school year, Baylor Scott & White Heart and Vascular Hospital – Dallas hosted students enrolled in health, science and technology programs at Title 1 schools. Title 1 funding is available to schools with at least 40% of their students meeting low income criteria established by the federal poverty census. The funding is designed to assist schools in meeting the educational goals of low-income students. In fiscal year 2021, the hospital paused the program in response to the COVID-19 pandemic and looks forward to welcoming back these students in fiscal year 2022.

In fiscal year 2021, as a part of the STEM Goes Red project of the American Heart Association, students from all over the Metroplex joined various organizations for a virtual presentation on STEM careers. The students had the opportunity to view different areas of the hospital, including the catheterization lab, non-invasive services and electrophysiology services. This is another program where the hospital team is strongly engaged in developing interest in young minds for healthcare careers.

**>150** *STEM Goes Red Students FY21: (virtual presentation in Dallas and Fort Worth)*

Over the years, several students who participated in various educational programs have enrolled in college to pursue healthcare careers. Several have gone on to graduate from medical school or have pursued nursing or allied health careers. Also, several past program participants have returned to Baylor Scott & White Heart and Vascular Hospital – Dallas as staff members.

In addition to area high schools, area junior colleges and universities were represented in the total number of proctored hours on the Dallas and Fort Worth campuses.

**7,731** *Total nursing students proctored and non-proctored hours (school year 2020 - 2021)*

**10,731** *Total non-nursing students proctored and non-proctored hours (school year 2020 - 2021)*

### Clinical rotation and proctoring occurred for students in nursing programs from the following universities and colleges in fiscal year 2021:

- Baylor University School of Nursing
- Tarrant County Community College
- Texas Wesleyan University
- Texas Woman’s University
- University of Texas – Arlington
- University of Texas – Tyler

The high school advanced programs, universities and colleges who sent students to Baylor Scott & White Heart and Vascular Hospital – Dallas and Fort Worth for allied health professions training included:

- Brookhaven Community College
- College of Healthcare Professionals
- Dallas Baptist University
- El Centro College
- Hill College
- Parker University
- Texas Tech University Health Science Center
- Texas Woman’s University

## Ongoing patient education and support programs

The hospital emphasizes community outreach by sponsoring ongoing classes focused on preventive health education.

### Leap for Life®

“Leap” stands for Lifestyle Education Awareness Program. For the past 14 years, this successful program has focused on the needs of cardiovascular patients and their family members. Leap for Life sessions in Dallas and Fort Worth educate the community on the steps that can be taken to manage cardiovascular disease and to improve health and well-being. This wellness and disease prevention program was available to all heart patients and their family members. The class was also open to anyone from the community. Educators with special expertise in cardiovascular patient care helped empower individuals with physical, dietary and stress management education and information.



Offered in 2021, virtual Leap for Life classes were hosted through an online platform that allowed speakers and participants to interact as they would during an in-person class while maintaining a safe distance. Additionally, online classes expanded the option for those who live outside the Dallas-Fort Worth region to learn about wellness and cardiovascular disease prevention from the experts at Baylor Scott & White Heart and Vascular Hospital.

#### Topics included:

- Stress Management
- Diabetes and Heart Health
- Mindful Eating and Staying Active
- Cardiac Medications

**For Leap for Life class schedules and more information: 1.844.BSW.DOCS.**

**565** Total Leap for Life participants educated (FY21)



### Wired for Life

Baylor Scott & White Heart and Vascular Hospital – Dallas teams up with past implantable cardioverter defibrillator (ICD) recipients to provide future or past ICD recipients with support, comfort and answers to questions. Volunteers are also available to meet with future recipients and family members before and after an ICD procedure. Classes have been scheduled every other month for the past nearly 10 years. With the COVID-19 pandemic, the team of electrophysiology nurses pivoted their educational sessions to virtual classes for patients.

**For Wired for Life class schedules and more information: 1.844.BSW.DOCS.**

### “Living with . . . “ community education series

In fiscal year 2021, several Living with AFib, Living with Heart Failure and Living with Healthy Legs evening community events were held in Dallas and Fort Worth. Expert presenters provided attendees with helpful information on managing chronic conditions, heart arrhythmias, heart failure, peripheral artery disease and peripheral vascular disease, and as well as signs and symptoms for a variety of conditions.

### Women and Heart Health

Fiscal year 2021 was the first year Baylor Scott & White Heart and Vascular Hospital hosted a virtual Women’s Heart Health event. Heart disease is the number one killer of women, and more than 180 attendees joined to listen. Female cardiovascular experts from Dallas and Fort Worth presented various topics ranging from signs and symptoms of a heart attack to heart failure and transplantation.

**>420** Total community education series participants (FY21)



## HeartSpeak

### On-demand education

#### HeartSpeak podcast

Baylor Scott & White Heart and Vascular Hospital provided on-demand education to patients and community members in fiscal year 2021. HeartSpeak is a podcast featuring tips about heart and vascular health with experts from the hospitals in Dallas and Fort Worth. Topics include various disease conditions from cardiovascular disease and diet to heart transplantation. The podcast series also has several Spanish-language episodes available to target the ever-growing Hispanic community in the DFW region. The podcast is available on Apple Podcast, Google Podcast, Spotify, or wherever you get your podcasts.



#### Baylor Heart Center app

Another platform used to provide on-demand education for the community is the Baylor Heart Center app available on iOS devices. Baylor Heart Center provides various resources, including navigation to and from the hospital as well as a 360-degree tour of the facilities; up-to-date news, podcasts and virtual hospital events; guided at-home exercise videos; and meditation exercises that may be paired with a smartwatch. To download the app, search Baylor Heart Center on the App Store.



## Community volunteerism

The team at Baylor Scott & White Heart and Vascular Hospital – Dallas remained committed to providing all employees with opportunities to be actively involved in the community. This took many forms in fiscal year 2021. The STARRS\* committee of employees met regularly to discuss community involvement and requests from various organizations who needed assistance. The committee was also dedicated to reaching out to economically challenged neighborhoods with heart-healthy information.

### STARRS\* -

Organizations specifically targeted for outreach in fiscal year 2021 included:

- Carter Blood Care
- Faith in Action Initiatives – a department of Baylor Scott & White Health - included donations of blankets and backpacks
- North Texas Food Bank

\*Service, Training, Accountability, Recruitment, Retention and Satisfaction





### Educational opportunities - clinicians

Educational opportunities are provided for hospital employees as well as for the clinicians throughout the community. Clinical research, interesting case studies or timely topics within the various specialties are presented by the medical staff, visiting experts or fellows training in the respective fellowship programs. CMEs and/or CEUs are often available. Some of the educational offerings are in-person conferences while others are streamed virtually.

#### Regular monthly educational events at the hospitals include:

- Cardiology Grand Rounds
- Cath Conference
- Electrophysiology Conference
- Echo Conference
- Vascular Surgery Conference
- Clinical Cardiology Conference
- Ethics Lunch and Learns
- Aortic Conference
- High-Risk Cardiac Surgery Meeting



### Cardiovascular Virtual Provider Presentation Series

**28** *FY21*  
*lectures*

The Dallas Cardiovascular Virtual Provider Presentation Series launched in July of 2020 as a platform to provide education to healthcare professionals, including physicians and advanced practice providers.

Initially offering bi-monthly presentations with the completion of 28 lectures to date on various topics across the cardiovascular disease spectrum. These presentations are given by physicians on the medical staff or advanced practice providers on the allied health professional staff at Baylor Scott & White Heart and Vascular Hospital - Dallas. The series now offers both AMA PRA Category 1 CME credit for all providers as well as ABIM MOC credit for physicians.

The lunchtime series transitioned to being offered on the second Tuesday of each month beginning in August of 2021.

#### Continuing education provided for first responders/EMS

During fiscal year 2021, the Dallas team recognized EMS paramedics quarterly for their work in the field. Following safety precautions, the team delivered a copy of the patient's outcome report in addition to a video message from a cardiologist on the medical staff thanking EMS for their work which resulted in a positive patient outcome. The paramedics were also presented with a unique challenge coin, a customary practice used to recognize first responders.

During National Emergency Medicine Week in May 2021, together with Baylor University Medical Center, a part of Baylor Scott & White Health, the hospital teams helped recognize area first responders/EMS with celebrations and medical education. More than 100 EMS team members participated in these activities including the opportunity to learn more about the procedures performed in the cardiac catheterization lab for STEMI patients.

While the pandemic during fiscal year 2021 slowed the number of scheduled events, the team looks forward to future educational events in collaboration with first responder organizations.



EMS Challenge Coin



Photo courtesy of Nancy Lieberman Charities

### Community sponsorships

#### Nancy Lieberman Charities



For many years, the hospital has supported Nancy Lieberman Charities' efforts to promote health and fitness in specific at-risk areas. A national organization known for its "Dream Ball Courts" program, the hospital supports the annual gala. In addition, the support extends to a summer basketball camp for economically challenged and at-risk children across the Metroplex.

#### American Heart Association



The teams at Baylor Scott & White Heart and Vascular Hospital - Dallas and Fort Worth are strong supporters of the American Heart Association's (AHA) efforts in the fight against cardiovascular disease and stroke. Support included the following events:

- Dallas Heart Walk
- Tarrant County Heart Walk
- Go Red for Women® Luncheon Dallas
- Go Red for Women® Luncheon Fort Worth
- CycleNation™
- Côtes du Coeur - Dallas' Heart Ball
- Heart Ball - Fort Worth
- STEM Goes Red

#### North Texas Food Bank

For the past several years and especially during the pandemic, donations were made to the North Texas Food Bank. Food insecurity concerns have increased. The organization distributes food through a network of more than 1,000 feeding programs and 262 Partner Agencies throughout North Texas. Together with other Baylor Scott & White Health facilities, contributions assisted with keeping the shelves stocked for numerous families impacted by the pandemic.



2021 STEM Goes Red



**5 STARS**  
CMS quality rating

**98.2%**  
Overall AMI performance

**5,721**  
Total cath lab cases

**2,496**  
Total vascular surgeries

**1,389**  
TAVRs performed (to date in the program)

**68**  
Heart transplants\*

**>75**  
Current number of cardiovascular clinical trials

**624**  
VADs implanted\* (to date in the program)

\*Performed at Baylor University Medical Center, part of Baylor Scott & White Health

Baylor Scott & White Heart and Vascular Hospital - Dallas is a Magnet®-recognized, fully accredited hospital serving residents of more than 10 cities in the Dallas-Fort Worth area. The hospital opened in 2002 as the first North Texas hospital dedicated solely to the care and treatment of heart and vascular patients. The hospital is located near downtown Dallas adjacent to Baylor University Medical Center, part of Baylor Scott & White Health. Providing inpatient and outpatient services focused on preventive heart health and comprehensive cardiovascular disease management, patients travel nationally and internationally for the specialists on the medical staff and the hospital's cardiovascular programs and services. In fiscal year 2021, the hospital registered more than 37,900 patients.

The above numbers report on Dallas campus activities for fiscal year 2021 unless otherwise noted.

Specially trained imaging professionals, including computed tomography (CT) specialists, magnetic resonance imagers and radiologists, collaborate as a team in the advanced imaging department at Baylor Scott & White Heart and Vascular Hospital - Dallas. Patients who have a cardiac device implanted and who were often excluded from having an MRI for other medical reasons, such as orthopedic concerns or neurologic conditions, are able to receive an MRI at the hospital. This capability on the Dallas campus is one of the few MRI programs in the Metroplex offering imaging to patients with implantable devices.

**2,180** Total number of MRIs (cardiac/non-cardiac) performed (FY21)

**Cardiac CT**

The computed tomography (CT) program at Baylor Scott & White Heart and Vascular Hospital - Dallas was awarded Gold Seal Accreditation for imaging services' quality and patient safety by the American College of Radiology (ACR). Thanks to advanced CT imaging technology, physicians on the hospital's medical staff can obtain images of the body that freeze motion without asking patients to hold their breath, saving time and expediting decisions regarding treatment.



Fractional flow reserve CT (FFRct) is available in the hospital's advanced imaging department. This technology provides non-invasive analysis of coronary artery blood flow in patients suspected of having coronary artery disease. FFRct may eliminate the need to perform diagnostic catheter angiography or to perform an invasive catheter-based FFR test, improving quality and safety.

**>5,700** Cardiac CTs performed (FY21)

**Calcium score screening**

Patients undergoing a calcium score screening via the CT receive a nurse consultation immediately following the scan, and the final report is sent to the referring physician.

**>800** Calcium score screenings performed (FY21)

**Cardiac MRI**



The advanced technology of the 1.5 Tesla magnetic resonance imaging (MRI) in the advanced imaging department provides a full complement of cardiac imaging capabilities. In collaboration with electrophysiologists, the hospital provides advanced safe imaging options for patients with cardiac implantable devices, including non-conditional pacemakers and defibrillators, who previously could not undergo an MRI. The MRI program at the hospital was awarded Gold Seal Accreditation for imaging services' quality and patient safety by the American College of Radiology (ACR).

Physicians on the medical staff of Baylor Scott & White Heart and Vascular Hospital - Dallas utilize cardiac MRI to diagnose a wide range of conditions, such as:

- Cardiomyopathy
- Atherosclerosis
- Cardiac tumor
- Aneurysm
- Congenital heart disease
- Heart failure
- Heart valve disease

MR angiograms (MRAs) are used to assess suspected aneurysms, plaque build-up, injuries or damage, blood clots, or structural problems. The total number of MRAs completed in fiscal year 2021 was 183.

**>1,000** Cardiac MRIs performed (FY21)

**Advanced CMR techniques/sequences available**

In July 2021, the hospital gained access to more advanced cardiovascular magnetic resonance technology to evaluate the potential of the novel MRI sequences/techniques for research and patient care. The technology includes the Wideband late gadolinium enhancement (LGE), 4D flow, and later in fiscal year 2022, FIDDLE sequences.

Wideband LGE sequence helps eliminate artifacts caused by ICDs/PPMs or other metal objects, making scar imaging/viability study more diagnostic and accurate in patients with cardiac implantable electronic devices or other metal implants. With the 4D flow technique, the complex blood flow patterns in the heart and great vessels can be visualized and measured throughout the cardiac cycle.

The FIDDLE sequence increases conspicuity of areas of myocardial scar adjacent to the blood pool, and the sensitivity of detecting subendocardial infarct, papillary muscle scar, and vessel wall delayed enhancement.

**Refer a patient: 214.820.0128.**





The Intersocietal Accreditation Commission (IAC) granted accreditation to the hospital's non-invasive services echocardiography and vascular testing programs. An ongoing goal of the hospital is to exceed national standards and encourage the IAC to continuously evaluate national standards.

### Non-invasive services: Cardiology

Baylor Scott & White Heart and Vascular Hospital – Dallas offers a comprehensive range of non-invasive approaches and technologies used by physicians on the medical staff to diagnose heart disease.

#### 2D/3D transesophageal echocardiogram

Used by some of the most advanced echocardiography labs in the world, three dimensional transesophageal echocardiograms are performed by specially trained team members and physicians on the medical staff at Baylor Scott & White Heart and Vascular – Dallas. Three dimensional imaging in echocardiography has proven to be superior to two dimensional echocardiography. Cardiac chamber volumes, congenital abnormalities and structural heart disease evaluations are more accurate and reproducible with limitations such as foreshortening a thing of the past, in some cases.

Non-invasive cardiac services offered:

- Exercise stress tests
- Holter monitoring
- Pharmacological/ exercise stress tests
- Echocardiograms
- Transthoracic echocardiograms
- Transesophageal echocardiograms

The Dallas campus team, in collaboration with the team in non-invasive cardiac services in Fort Worth, launched the weekly Sonographer Education Conference in fiscal year 2021. This educational virtual event led by sonographers was created to support efforts to make knowledge and technique follow national standards and guidelines set forth by the American Society of Echocardiography.

**>20,000** Total non-invasive procedures performed (FY21)

The team in the non-invasive services department is actively involved in elevating the profession, working on nationwide projects to standardize roles for advanced cardiac sonographers and improving processes and patient experience. As recognized subject matter experts in the profession, team members have been involved in national publications and review courses for the American Society of Echocardiography. Michael Rampoldi, ACS, RDCS, RVT, FASE, manager of non-invasive cardiology at Baylor Scott & White Heart and Vascular Hospital in Dallas and Fort Worth, is a contributing author on two books that are reference guides for echocardiographers: *Basic to Advanced Clinical Echocardiography*, *A Self-Assessment Tool for the Cardiac Sonographer* and *Echocardiographer's Pocket Reference (5th Ed)*.

### Non-invasive services: Vascular

Non-invasive vascular services at Baylor Scott & White Heart and Vascular Hospital – Dallas offers diagnostic testing and pre-procedure planning to assist physicians in diagnosing many conditions of the circulatory system, including blood vessel blockages and aneurysms. The entire non-invasive vascular team has received specialized training and certification in vascular imaging.

The non-invasive vascular lab is accredited by the IAC in peripheral venous, peripheral arterial and extracranial cerebrovascular duplex examinations. The department has been accredited for vascular testing since 2005. All sonographers are nationally registered, while physicians on the medical staff include board-certified vascular surgeons, cardiologists and other specialists.

Types of non-invasive vascular procedures available:

- Extra-cranial cerebrovascular duplex scans
- Arterial ultrasound exams
  - Upper and lower extremity arterial duplex scans
  - Bypass graft scans
  - Pseudoaneurysm scans
  - Abdominal aorta aneurysm scans
  - Renal artery scans
- Physiologic arterial testing
  - Ankle-brachial index (ABI)
  - Segmental pressure tests
- Venous ultrasound exams
  - Upper and lower extremity vein mapping and scanning
  - Upper and lower extremity venous duplex



The Hispanic Cardiovascular Institute – Dallas is comprised of a multidisciplinary team of physicians on the medical staff at Baylor Scott & White Heart and Vascular Hospital – Dallas and Baylor University Medical Center who specialize in providing care at all stages of cardiovascular disease, including cardiology, cardiac surgery, thoracic surgery, vascular surgery, advanced heart failure, infectious disease, anesthesiology, and nutrition services.

Team members of the institute understand the cultural dynamics of the Hispanic population. For this reason, the team attaches great importance to incorporating the Spanish language, family and religion in medicine. This eliminates barriers and creates a comforting and empathetic environment, often leading to the patient's better understanding of his or her health condition.

Catering care to the Latin American population which comprises 42%\* of the Dallas community, involves understanding the common diseases and risk factors. Hispanics are at a higher risk of developing coronary artery disease, stroke and heart failure. Our team follows the patient throughout his or her advanced cardiovascular care journey, coordinating with the patient's referring office to provide a collaborative, positive experience throughout the continuum of care.

As part of the Institute's outreach efforts and unwavering commitment to serving the Hispanic population, physicians in the Hispanic Cardiovascular

Institute volunteer to participate in a medical mission called *Salvando Corazones*, or *Saving Hearts*. Since 2013, the medical mission has brought critical cardiovascular surgeries to people in Peru. The mission also includes a mentorship program, which helps foster practical learning for Peruvian surgical residents to apply the techniques learned to build a brighter medical future for the people of Peru.

\* According to World Population Review 2021

#### Hispanic Cardiovascular Institute – Dallas medical staff physician team (FY21):

- Sharon Choi, MD – Cardiology
- Cesar Guerrero-Miranda, MD – Advanced Heart Failure and Transplant Cardiology
- Alfredo Jimenez, MD – Cardiology
- Alfredo Lopez, MD – Anesthesiology
- Eitan Podgaetz, MD – Thoracic Surgery
- Aldo Rafael, MD – Cardiac Surgery and Heart Transplantation
- Uriel Sebastian Sandkovsky, MD – Infectious Disease
- Leonidas Tapias, MD – Thoracic Surgery
- Javier (Jay) Vasquez, MD – Vascular Surgery
- Leticia Ramirez, NP – Nurse Practitioner
- Carolina Luzon, RD – Dietitian

**Refer a patient to the Hispanic Cardiovascular Institute – Dallas: 214.820.0390 or email [BSWHVHHispanicCVInstitute@BSWHealth.org](mailto:BSWHVHHispanicCVInstitute@BSWHealth.org).**

Total EP procedures  
(FY21):

4,492

Pacemakers/ICDs  
implanted (FY21):

657

Permanent  
pacemaker insertions  
or replacements  
(FY21):

527

ICD implants or  
replacements (FY21):

130

ILR (FY21)

147

AV Node Ablations  
(FY21):

60

AFib Ablations (FY21):

371

SVT Ablations (FY21):

258

VT Ablations (FY21):

98

Baylor Scott & White Heart and Vascular Hospital – Dallas' electrophysiology (EP) services maintained its leadership position in North Texas, performing nearly 4,500 total EP procedures in fiscal year 2021. The physicians in cardiac electrophysiology on the hospital's medical staff use their vast experience for one of the busiest programs in the region. Home to innovative research and many "firsts" in the history of the specialty, the high-volume program includes the diagnosis and treatment of patients with atrial fibrillation, ventricular tachycardia, Wolff Parkinson White syndrome, flutter, and other abnormal heart rhythms. Treatment labs equipped with technologically advanced equipment, such as 3D mapping, enable the team of clinicians to deliver the appropriate treatment to each patient experiencing a heart rhythm problem. The philosophy of the electrophysiology team is to support involvement from the referring primary care provider and the patient's non-interventional cardiologist.

The multidisciplinary team is comprised of experienced fellowship-trained electrophysiologists, cardiologists, imaging specialists, specially trained nurses, and researchers focused on heart rhythm studies and clinical trials. Cardiac surgeons may be a part of the team depending on the treatment option or for those patients who receive MAZE – a surgical procedure. Depending on the patient's condition and individual disease state, the team employs a variety of diagnostic and treatment modalities including medical management, ablation, implantable devices such as pacemakers and implantable cardioverter-defibrillators, surgical intervention and more.

### Two new fiscal year 2021 procedures: the **remedē**® System and Convergent.

Consistent with the history of the electrophysiology department on the Dallas campus, the team remains on the forefront of the latest treatment options and procedures for those suffering with heart rhythm disorders. In fiscal year 2021, two new treatment options became available and offer hope to patients with central sleep apnea and persistent atrial fibrillation.

The **remedē**® System uses an implantable device to treat central sleep apnea by using phrenic nerve stimulation. Central sleep apnea (CSA) is a serious breathing disorder that disrupts the normal breathing pattern during sleep and negatively affects sleep quality and is associated with poor outcomes. CSA is caused by the brain's inability to send appropriate signals to the respiratory muscles to stimulate breathing. The remedē System is an implantable device that activates automatically each night to stimulate a nerve in the chest (phrenic nerve) that sends signals to the breathing muscles to control breathing. It monitors respiratory signals and helps restore normal breathing patterns. The battery-powered remedē System is placed under the skin in the patient's upper chest by an electrophysiologist on the hospital's medical staff.

The **Convergent** (hybrid ablation) procedure includes both epicardial and endocardial ablation and combines the expertise of both a cardiothoracic surgeon and an electrophysiologist to treat more persistent forms of atrial fibrillation. The procedure is usually performed in two stages, two to six weeks apart. Initially the cardiothoracic surgeon will make a small 2cm to 3cm subxiphoid incision and use a camera and long scope with a special device to ablate the posterior wall of the heart with radiofrequency energy. At the same time, via three small ports on the left lateral of the chest, the surgeon will

thoracoscopically place a clip across the base of the left atrial appendage which will provide electrical isolation and reduce stroke risk. The patient will usually stay two nights in the hospital after this stage of the procedure.

A few weeks later, an electrophysiologist will bring the patient into the EP lab and place catheters inside the patient's heart via small incisions in the patient's upper leg. This will deliver cryo-energy (freezing) and radiofrequency energy to complete the circuits and ablate any areas that are still emitting abnormal signals. The electrophysiologist meticulously connects his/her work with the post-exterior ablation that was performed by the cardiothoracic surgeon. The patient will usually be discharged the same day following the endocardial portion of the procedure. Baylor Scott & White Heart and Vascular Hospital – Dallas was one of the first hospitals in North Texas to offer the Convergent procedure.

Baylor Dallas site was one of several research centers in the US to participate in clinical trials focused on proving the safety and efficacy of the Convergent procedure.

*For a complete listing of all of the clinical trials currently open, go to [BSWHealth.com/research/clinical-trials](https://www.bswhealth.com/research/clinical-trials).*

### Heart Rhythm Center - Dallas

In fiscal year 2021, the Heart Rhythm Center at Baylor Scott & White Heart and Vascular Hospital – Dallas continued to provide individualized support and treatment for patients from throughout the region with complex heart rhythm disorders. The center's team of specialists on the hospital's medical staff included fellowship-trained cardiac electrophysiologists with intensive training in evaluating and treating heart arrhythmias, along with experienced nurse practitioners, physician assistants and nurses. Other disciplines that contribute to the success of the Heart Rhythm Center include clinical cardiologists, cardiac surgeons, imaging specialists, and researchers.

Patients benefit from accurate diagnoses and treatment of irregular heartbeat conditions, such as atrial fibrillation, ventricular tachycardia, atrial flutter, atrial tachycardia, PACs and PVCs, and other related arrhythmias. The team provides referring physicians and patients with extensive information on heart arrhythmias and evidence-based treatment options, including medication therapy, catheter-based procedures and surgery. The goal is to provide personalized assistance to patients as the patients

and their primary care provider navigate through the process of diagnosis and treatment. Specialized interventions include:

- 3D mapping for complex arrhythmia ablation
- Transcatheter ablation therapy, radiofrequency ablation and cryoablation
- Cardiac resynchronization therapy
- Left atrial appendage closure
- Pacemaker and implantable cardioverter defibrillator (ICD) device implantation
- Laser-assisted lead extraction and newer mechanical extraction system tools
- Cardiac device therapy for central sleep apnea
- Surgical procedures including MAZE

*For information about the Heart Rhythm Center: 214.820.5306.*

### Cardiac ablation expertise

Catheter ablation has grown as a treatment option for patients with ventricular tachycardia (VT), the abnormal rapid heart rhythm originating from the lower pumping chambers of the heart—the ventricles. Most commonly seen in patients with a weakened heart muscle from cardiomyopathy or from scar tissue as a result of a prior heart attack, VT left untreated can evolve into ventricular fibrillation (VF). VF can be fatal if not defibrillated into a normal rhythm.

The EP department's labs at Baylor Scott & White Heart and Vascular Hospital – Dallas are equipped with sophisticated 3D mapping technology, decreasing the need for fluoroscopy and improving procedural time efficiency. The arrhythmia-locating technology combines magnetic and current-based technologies for real-time display of catheter locations, as well as intra-cardiac echocardiography images of the heart's chambers. These maps contain anatomical, electrical voltage, electrical activation times and ablation data.

### Leadless pacers

In fiscal year 2021, electrophysiologists on the hospital's medical staff continued to place the world's smallest pacemaker called the Micra™ Transcatheter Pacing System in patients. The size of a nickel or paperclip, the pacemaker represents the first entry in what is a new class of slender, minimally invasive pacemakers that rest entirely inside the heart.



This type of leadless pacemaker is placed directly into the right ventricle using a flexible tube the size of a large drinking straw, which is advanced into the heart from a small incision in the leg. Tiny bits of metal on the end of the pacemaker hook or screw into the heart tissue. This avoids the need for traditional pacemaker insulated wires called leads to deliver the pacemaker's electric pulses. This revolutionary leap forward in pacemakers has dramatically improved the safety and quality of life for the patient, eliminating leads that traditionally wore out or increased risk of infection.

## 43 Total Leadless Pacers (FY21)

### Device lead extraction

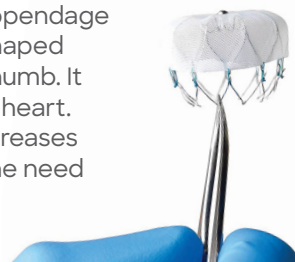
Electrophysiologists on the medical staff at Baylor Scott & White Heart and Vascular Hospital – Dallas are often called to repair or maintain pacemakers. Patients are often referred with complex conditions requiring removal of leads because of electrical malfunctions, blocked blood vessels or infection. In most cases, the leads can be removed using a catheter-based approach. In some cases, the pacemaker needs to be replaced with a newer model.

## 42 Total Lead Extractions (FY21)

### Left atrial appendage occlusion (LAAO)

In fiscal year 2021, electrophysiologists on the hospital's medical staff continued to treat patients at risk of developing blood clots in the left atrial appendage of their heart with the left atrial appendage occluder (LAAO) device. The Dallas campus was one of the leading research sites that conducted clinical trials on the left atrial appendage devices to prove the safety and efficacy of the device that is now becoming more of a recognized treatment option for patients.

Atrial fibrillation (AFib) can decrease the heart's pumping efficiency by as much as 30%. Compromised pumping increases the risk of clots forming in the heart chambers, particularly the left atrial appendage (LAA). The LAA is pouch-shaped and about the size of the thumb. It is located on the top of the heart. LAAO device generally decreases the risk of stroke without the need for blood thinners.



Courtesy of  
Boston Scientific

Now, the LAAO device is more commonly offered as a viable option for patients who are unable to take blood thinners. The LAAO device is designed to prevent blood clots that frequently form in the LAA from traveling in the blood stream to the brain, lungs and other parts of the body. After receiving this device, patients are generally released from the hospital after 24 hours. Medical follow-up continues over the course of time as patients decrease their blood thinner medication under the supervision of a cardiologist.

LAAO device is suitable for patients with nonvalvular atrial fibrillation who:

- Are at an increased risk for stroke and systemic embolism based on CHADS2 or CHADS2-VASc scores and are recommended for anticoagulation therapy
- Have an appropriate rationale to seek a non-pharmacologic alternative to oral anticoagulation, taking into account the safety and effectiveness of the device compared to warfarin.

## 68 Total LAAOs (FY21)

### Patient education and support



Wired for Life is an educational class for patients with implantable cardioverter defibrillators (ICDs). The electrophysiology team provides patients with guidance, encouragement and support on the use of their ICDs. Patients suffering from cardiomyopathy, congestive heart failure or who have experienced sudden cardiac arrest, know that the ICD can be a lifeline. A workshop for patients with ICDs is offered six times per year by clinical experts from Baylor Scott & White Heart and Vascular Hospital – Dallas. Due to COVID-19, the clinicians worked on a way to continue the classes virtually through an online platform. Virtual classes continued during the pandemic for patients and family members. The classes are also open to anyone in the community who has an ICD – regardless of where the ICD was implanted. In fiscal year 2021, more than 150 patients registered for these webinars.

**For more information about Wired for Life classes:**  
[BSWHealth.com/Events](https://BSWHealth.com/Events).

The Baylor Scott & White Heart and Vascular Hospital – Dallas interventional cardiology program is supported by 11 well-equipped labs—four of which are heart and vascular capable, five are electrophysiology capable, one is used for endovascular cases, and two serve as hybrid rooms. The labs are supported by advanced technology, including digital subtraction, intravascular ultrasound, intracardiac echocardiography and coronary flow wire—equipment that enhances data accuracy and accessibility.

Robotic-assisted coronary angioplasty is an additional technology available to interventional cardiologists on the hospital's medical staff. Robotics improves the precision of stent and balloon placements and reduces radiation exposure during the procedure for physicians. Cardiologists on the medical staffs at both the Dallas and Fort Worth campuses became a part of a small group in the state of Texas to first use robotic-assisted technology to perform coronary angioplasties or place cardiac stents.

### Specialized Interventional Procedures

Angioplasty-related interventional cardiology procedures—percutaneous coronary intervention (PCI), balloon angioplasty, coronary angioplasty, coronary artery angioplasty, percutaneous transluminal coronary angioplasty, and heart artery dilatation—are foundational components of the hospital's interventional cardiology program. In addition, patients diagnosed with unprotected left main disease (ULM) continue to be referred to the skilled and experienced interventional cardiologists on the hospital's medical staff for advanced treatment. Other specialized interventional procedures available to patients at Baylor Scott & White Heart and Vascular Hospital – Dallas include:

- Balloon valve repair
- Cardiac assist devices
- CardioMEMS™ heart failure system
- Carotid stenting
- Coronary angioplasty and stenting with advanced generation stents
- Coronary atherectomy
- Extracorporeal membrane oxygenation (ECMO)
- Left atrial appendage occlusion (LAAO)
- Percutaneous coronary intervention (PCI) of chronic total occlusions
- Peripheral angiography and angioplasty
- Peripheral atherectomy
- Unprotected left main disease intervention

### Percutaneous coronary intervention (PCI)

PCI continues to be the favored treatment option for patients with simple and complex ischemic cardiovascular disease. Patients benefit from the experience of the nationally recognized team of interventional cardiologists on the medical staff of Baylor Scott & White Heart and Vascular Hospital – Dallas. Research and clinical trials on the Dallas campus in the area of ischemic cardiovascular disease are often made available to patients and many results have advanced stent efficacy, as well as other innovations in the field of interventional cardiology. (See the Research and Clinical Trials section for a summary of all fiscal year 2021 studies.)

**For a current listing of clinical trials:**  
[BSWHealth.com/research/clinical-trials](https://BSWHealth.com/research/clinical-trials).

### Transradial Cardiac Catheterization

Transradial cardiac catheterization is both a safe and effective procedure to diagnose and treat blockages in the heart. Traditionally, cardiac catheterization is performed using a small incision in the leg, but studies have shown that going through the wrist, using the transradial approach, produces the same results with a shorter hospital stay and with less bleeding or discomfort for the patient. At Baylor Scott & White Heart and Vascular Hospital – Dallas, the transradial approach has been performed since 1996, and the number of procedures continues to grow year-over-year. In fiscal year 2021, more than 24% of the total PCI cases were performed by transradial access.

Diagnostic cardiac procedures (FY21):

>2,320

Total cardiac cath cases - Dallas (FY21):

>10,975

Total PCI cases - Dallas (FY21):

>1,645

Total chronic occlusion (FY21):

68

Percutaneous coronary intervention (PCI)*	US Registry 90th percentile	BSWHVH - Dallas	Better, same, worse than US Registry 90th percentile
PCI in-hospital risk-adjusted mortality (all patients)	1.33	0.96	BETTER
Composite: Major adverse events (all patients)	0.86	0.57	
Composite: Major adverse events (select PCI patients)	0.8	0.6	
PCI in-hospital risk-adjusted mortality (patients with STEMI)	4.05%	1.3%	SAME
Median time to immediate PCI (transfer patients with STEMI)	86 minutes	86 minutes	

Percutaneous coronary intervention*	US Registry 75th percentile	BSWHVH - Fort Worth	Better, same, worse than US Registry 75th percentile
Composite: Guideline medications prescribed at discharge	99%	99.6%	BETTER
Median transfer time from door to door (patients with STEMI)	63 minutes	57 minutes	
Referral to cardiac rehab	96.6%	96.7%	

Percutaneous coronary intervention*	US Registry Median	BSWHVH - Fort Worth	Better, same, worse than US Registry Median
PCI within 90 minutes (patients with STEMI)	94.48%	97.67%	BETTER
Intra/post procedure stroke	0.2%	0.1%	

\*National Cardiovascular Database and Registry (NCDR) Baylor Scott & White Heart and Vascular Hospital - Dallas. Source: R4Q through 2021 Q1 published information.

### Regionalized STEMI Program

Baylor Scott & White Heart and Vascular Hospital - Dallas, together with Baylor University Medical Center, collaborates with area free-standing emergency departments, urgent care centers and community hospitals to provide quick treatment for patients who experience a STEMI—segment elevation myocardial infarction. Door-to-balloon time for STEMI patients is a key measurement for any STEMI patient transported to the emergency department. However, during fiscal year 2021, the NCDR changed its preferred metric definition for the time to reflect the first medical contact with the patient until the interventional cardiologist makes first device activation in the cath lab.



Before

After

AMI performance	US Registry 90th percentile	BSWHVH - Dallas	Better, same, worse than US Registry 90th percentile
Overall AMI performance composite	98.2	98.8	BETTER
Overall defect-free care	88.8%	91%	
Discharge AMI performance composite	98.9%	99.1%	
STEMI performance composite	99.1%	99.2%	SAME
NSTEMI performance composite	98.5%	98.8%	
Beta-blocker prescribed at discharge	100%	100%	SAME
ACE-I or ARB for LVSD at discharge	100%	100%	

AMI performance	US Registry 75th percentile	BSWHVH - Fort Worth	Better, same, worse than US Registry 75th percentile
Cardiac Rehabilitation patient referral from an inpatient setting	97.6%	98.9%	BETTER
High-Intensity Statin therapy for all AMI patients	100%	100%	
ACUTE AMI Performance composite	97.4%	97.7%	

National Cardiovascular Database and Registry (NCDR\*) Baylor Scott & White Heart and Vascular Hospital - Dallas Source: RQ 2021 Q1 published information.

\*Overall AMI performance composite: Includes ASA at arrival, Eval LV function, Reperfusion, Time to PCI/Therapy, DC Meds: ASA, BB, ACEI/ARB, Statin, Smoking, Cardiac Rehab. Acute AMI performance composite: ASA at arrival, Eval LV, Time to PCI/Therapy. Discharge AMI performance composite: DC BB, ACE/ARB, Statin, Smoking Cessation, Cardiac Rehabilitation.

Overall AMI composite score (FY21):\*\*

98.8%

\*\* For STEMI patients on acute discharge and performance metrics

Total AMIs (FY21):

275

STEMIs (FY21):

130

NSTEMI (FY21):

143

Total number of transfers (FY21):

107

Median door-to-balloon time:

56.5 MINUTES



### Mission: Lifeline®/Get With The Guidelines Gold-Plus, and Gold Recognition

In early fiscal year 2022, Baylor Scott & White Heart and Vascular Hospital - Dallas received Mission: Lifeline® Gold-Plus recognition as a STEMI Receiving Center and Gold recognition for NSTEMI care from the American Heart Association. The Gold-Plus award recognizes the hospital for implementing specific quality improvement measures for the treatment of patients who suffer severe heart attacks, including emergency procedures to re-establish blood flow to blocked arteries. Not only was the criteria for Gold status met, but the Plus designation means the hospital achieved 75% or greater compliance on the Quality PLUS measures. In addition, the Gold for NSTEMI designation recognizes the hospital for meeting specific criteria and standards of performance for the quick and appropriate treatment of NSTEMI heart attack patients.

Note: American Heart Association does not endorse the products or services of the hospital recognized in this advertisement.



### Platinum Performance Achievement Award 2020

Baylor Scott & White Heart and Vascular Hospital - Dallas has demonstrated sustained achievement in the Chest Pain - MI Registry for two consecutive years (2018 and 2019) and performed at the highest level for specific performance measures to receive this 2020 award.

### The Joint Commission Chest Pain Certification



Baylor Scott & White Heart and Vascular Hospital, together with Baylor University Medical Center, achieved certification by The Joint Commission for Chest Pain.



### Chronic total occlusion stenting

Baylor Scott & White Heart and Vascular Hospital – Dallas is a regional and national referral center for high-risk patients seeking treatment for totally occluded arteries with chronic total occlusion (CTO) stenting. An option to bypass surgery, the hospital is among a handful of medical facilities in Texas offering this service to address coronary obstructions. In addition to being one of the highest volume CTO cardiac centers in the nation, the hospital is also dedicated to research and innovation.

The hospital participates in the CTO Progress Registry, a national database of elite cardiac centers nationwide that share data to identify best practices and best outcomes. Patients benefit from CTO related studies including various research trials to drive innovation. The hospital's participation in the registry differentiates the program's capabilities from many others.



**68** Chronic total occlusions (FY21)

### Shockwave Coronary Intravascular Lithotripsy System®

#### Peripheral use

Interventional cardiologists and vascular surgeons on the medical staff of Baylor Scott & White Heart and Vascular Hospital – Dallas were the first specialists in North Texas to use the Shockwave Intravascular Lithotripsy System® (IVL) to treat peripheral artery disease. The peripheral IVL System that was approved in the prior year is effective in addressing the most difficult to treat patients with intimal and deep wall medial calcium. The IVL System has sizes capable of treating above and below the knee and is also being used in patients with heavily calcified iliac arteries in order to facilitate the transfemoral delivery of sophisticated devices in TAVR, EVAR and TEVAR and high-risk PCIs that require a left ventricular assist device. The new technology enables this patient group to benefit from this innovative technology when they would otherwise be ineligible for the procedure or would be at an increased risk for procedural complications.

#### Coronary use: a first in Texas

Baylor Scott & White Heart and Vascular Hospital – Dallas participated in a worldwide clinical trial to evaluate the safety and effectiveness of the Shockwave coronary intravascular lithotripsy system. The investigational technology uses a

balloon catheter system designed to enhance stent outcomes by enabling delivery of the calcium disrupting capability of lithotripsy prior to balloon dilatation at low pressures. The single-use sterile catheter contains multiple lithotripsy emitters enclosed in an integrated balloon. The emitters create sonic pressure waves in the shape of a sphere, creating a field effect to disrupt and fracture calcium in the affected artery.

In fiscal year 2021, the team in the cath lab in Dallas, together with medical director for the cath lab and co-medical director of cardiology, Robert Stoler, MD, MD, FACC, FSCAI, were the first in Texas to use the technology for patients with heavily calcified coronary arteries.

### Synergy Megatron™ use becomes another FY21 “first”

Dr. Stoler and the cath lab team also were the first in Texas to place SYNERGY MEGATRON™ from Boston Scientific Corporation, the first and only commercially available, purpose-built drug-eluting stent for large, proximal vessels.

Both of these firsts in fiscal year 2021, the IVL System use for coronary procedures and the newest generation drug-eluting stent for large, proximal vessels, were approved by the Food & Drug Administration (FDA) during fiscal year 2021. These new-to-market treatment options had clinical trials conducted on the campus of Baylor Scott & White Heart and Vascular Hospital – Dallas with Dr. Stoler the principal investigator.

### Endovascular treatment for pulmonary embolisms

In fiscal year 2021, interventional cardiologists on the medical staff of Baylor Scott & White Heart and Vascular Hospital – Dallas use the newest endovascular system to treat pulmonary embolism and deep vein thrombosis. The approach helps improve the efficiency of the thrombolytic process and reduce the treatment time and total lytic dose, thereby reducing the associated bleeding risk and overall cost of therapy. The system enables ultrasound facilitated, controlled and selective infusion of physician-specified fluids, including thrombolytics, into the vasculature for the treatment of pulmonary embolism. This technology is intended for the treatment of pulmonary embolism patients with ≥50% clot burden in one or both main pulmonary arteries or lobar pulmonary arteries and evidence of right heart dysfunction based on right heart pressures (mean pulmonary artery pressure ≥25 mmHg) or echocardiographic evaluation.

## STRUCTURAL HEART DISEASE PROGRAM

Generally, structural heart disease programs focus on diseases involving the heart's valves or other noncoronary structures of the heart. When it comes to this specialized area, Baylor Scott & White Heart and Vascular Hospital – Dallas brings additional specialties into the discussion to provide individualized, multidisciplinary care.

This team includes interventional cardiologists and cardiac surgeons as well as echocardiology specialists, advanced imaging experts and electrophysiologists. Expertise from board certified cardiovascular anesthesiologists is also vitally important. These specialized anesthesiologists work in concert with the team, differentiating the Dallas campus from others.

The program offers catheter-based and less invasive procedures, resulting in better outcomes for many patients. For example, the MitraClip® device has grown as a treatment option for patients with mitral regurgitation who are not candidates for surgical valve replacement. The program's Center for Valve Disorders and Aortic Center received patients from all over Texas as well as the greater region in fiscal year 2021 for conditions needing advanced treatment options provided at Baylor Scott & White Heart and Vascular Hospital – Dallas. (See dedicated sections for more information on these centers.)

### Structural Heart Disease Program procedures include:

- Atrial septal defect (ASD) closure
- Left atrial appendage occlusion (LAO)
- Minimally invasive surgical repair of structural heart defects
- Minimally invasive surgical heart valve repair or replacement
- Minimally invasive tricuspid valve repair
- Patent foramen ovale (PFO) catheter repair
- Transcatheter aortic valve replacement – minimally invasive (TAVR)
- Transcatheter mitral valve repair – minimally invasive (TMVR)
- Transcatheter pulmonic valve replacement
- Percutaneous tricuspid valve repair

For more information and a complete list of updated clinical trials: [BSWHealth.com/research/clinical-trials](https://www.bswhealth.com/research/clinical-trials).

Widely published throughout the years, the interventional cardiologists on the medical staff were again authors or contributing authors in fiscal year 2021 for several medical and scientific journals. Several of the articles published were directly related to structural heart disease.

A sampling of the articles and citations in fiscal year 2021:

- Briedis K, Aldujeli A, Aldujeili M, Briede K, Zaliunas R, Hamadeh A, Stoler RC, McCullough PA. Considerations for Management of Acute Coronary Syndromes During the SARS-CoV-2 (COVID-19) Pandemic. American Journal of Cardiology. Sept 2020; 131:115-119.
- Choi, JW, Sivakumar Sudhakaran, Tandon, A, Rafael, AE. Sever Mitral Paravalvular Leak Treated with Percutaneous Paravalvular Leak Closure with Underlying Severe Mitral Annular Calcium. American Journal of Cardiology. June 2021, 152: 165-167.
- Hamadeh A, Aldujeli A, Briedis K, Tecson KM, Sanz-Sánchez J, Al Dujeli M, Al-Obeidi A, Diez JL, Žaliūnas R, Stoler RC, McCullough PA. Characteristics and Outcomes in Patients Presenting With COVID-19 and ST-Segment Elevation Myocardial Infarction. American Journal of Cardiology. Sept 2020; 131:1-6.
- Szerlip M, Anwaruddin S, Aronow HD, Cohen MG, Daniels MJ, Dehghani P, Drachman DE, Elmariah S, Feldman DN, Garcia S, Giri J, Kaul P, Kapur NK, Kumbhani DJ, Meraj PM, Murray B, Nayak KR, Parikh SA, Sakhuja R, Schussler JM, Seto A, Shah B, Swaminathan RV, Zidar DA, Naidu SS. Considerations for cardiac catheterization laboratory procedures during the COVID-19 pandemic perspectives from the Society for Cardiovascular Angiography and Interventions Emerging Leader Mentorship (SCAI ELM) Members and Graduates. Catheter Cardiovascular Interventional. Sep 2020. 96(3): 586-597.

For more information about the Structural Heart Disease Program: [214.820.3604](tel:214.820.3604).

For emergent aortic transfers to Baylor University Medical Center and Baylor Scott & White Heart and Vascular Hospital – Dallas: [214.820.6444](tel:214.820.6444).



TAVR cases (FY21):

166

Percutaneous mitral valve procedures since 2011:

132

Median length of stay:\*

1 DAY

TAVRs since 2011:

1,389

Commercial TAVR in-hospital observed mortality rate:\*

0.6%

Femoral access in TAVR patients:\*

95%

Minimally invasive mitral valve repair in-hospital mortality rate:\*

0%

\*STS/ACC TVT Registry Institutional Outcomes Report 2020Q4 R4Q



The Center for Valve Disorders is a high-volume program that expands minimally invasive treatment options for patients with structural heart disease. Therapies available through the Center for Valve Disorders include:

- Minimally invasive aortic, mitral, pulmonic, and tricuspid valve repair and replacement
- Transcatheter valve-in-valve implantation for failed bioprosthetic valves in the aortic and mitral position
- MitraClip® and transcatheter mitral valve repair (TMVR) for high surgical risk patients with severe mitral regurgitation
- Balloon mitral valvuloplasty for mitral stenosis
- Percutaneous left atrial appendage occlusion
- Percutaneous patent foramen ovale closure
- Percutaneous atrial septal defect closure
- Alcohol septal ablation for hypertrophic obstructive cardiomyopathy

The center uses advanced imaging technology, including:

- 384-slice CT scanner
- 1.5 Tesla magnetic resonance imager

## Minimally invasive aortic valve therapies

Baylor Scott & White Heart and Vascular Hospital – Dallas continues to be one of the highest volume centers in the US for commercial and research minimally invasive valve repair and replacement procedures. Since the early beginnings of TAVR, Robert Stoler, MD, medical director of the cardiac catheterization lab and co-director of the Division of Cardiology, has conducted transcatheter mitral and aortic valve studies leading to FDA approval of new technologies for patients. Dr. Stoler and other implant physicians involved in the Center for Valve Disorders have proctored cases internationally on three TAVR devices, sharing knowledge from the multidisciplinary Dallas campus program.

### Aortic valve research trials:

- Clinical trials available in fiscal year 2021 included asymptomatic severe aortic stenosis, new generation valves, small annulus size and cerebral embolic protection

*In July 2021, Baylor Scott & White Heart and Vascular Hospital – Dallas was the first in the state of Texas to enroll a patient in the SMART trial.*

## Minimally invasive mitral valve therapies

For years, open heart surgery was the only treatment option for mitral regurgitation. Through the advancement of research and the clinical trials conducted by cardiologists on the medical staff at Baylor Scott & White Heart and Vascular Hospital – Dallas, mitral regurgitation can be treated via a minimally invasive transcatheter repair.

### Mitral valve research trials:

- Clinical trials available include symptomatic mitral regurgitation or mitral stenosis through transcatheter mitral valve repair and replacement using new generation technology

The Dallas campus was involved in the initial COAPT trial which led to the evolution of this device including FDA approval for commercial use in primary and secondary functional mitral regurgitation.

**96%** Post-minimally invasive valve replacement patients discharged home with no additional care required\*

## Minimally invasive tricuspid valve therapies

### Tricuspid Valve Research Trial:

Clinical trial available included minimally invasive tricuspid valve repair with TriClip™.

## Surgical aortic, mitral and tricuspid repair and replacement

Patients who are surgical candidates undergo workups to include minimally invasive replacement as well. Shared decision making occurs between the Center for Valve Disorders team and patients regarding open surgical versus minimally invasive intervention.

### Center for Valve Disorders medical staff team (FY21):

Interventional cardiologists:

- James W. Choi, MD, FACC, FSCAI
- Stuart Lander, MD, FACC
- Robert Stoler, MD, FACC, FSCAI
- Ravi Vallabhan, MD, FACC, FSCAI

Imaging cardiologists:

- Haojie Wang, MD, PhD, FACC, RPVI
- Anumeha Tandon, MD

Cardiac surgeons:

- Daniel H. Enter, MD
- Robert F. Hebler, Jr., MD, FACS
- Albert Carl Henry, III, MD, FACS
- Aldo Rafael, MD

Advanced nurse practitioners:

- Anna-Catherine Wolyneec, FNP-BC

**To make a referral to the Center for Valve Disorders in Dallas or for more information: 214.820.3604, email [ValveCenter@BSWHealth.org](mailto:ValveCenter@BSWHealth.org) or visit [BSWHealth.com/DallasHeartValveCenter](http://BSWHealth.com/DallasHeartValveCenter).**



 Baylor University Medical Center was awarded 3-Stars\* for Isolated CABG for the fourth consecutive recognition period in FY21.  
\*Highest star rating by the Society of Thoracic Surgeons (STS)

Baylor University Medical Center was rated High Performing in Aortic Valve Surgery and Heart Bypass Surgery for the seventh consecutive year by U.S. News & World Report for 2021 - 22.



To extend the continuum of care on the downtown Dallas campus, Baylor Scott & White Heart and Vascular Hospital - Dallas collaborates closely with Baylor University Medical Center's cardiac programs. As such, the following data from cardiac surgery, advanced heart failure and heart transplantation is available for fiscal year 2021.



**Coronary artery bypass surgery**

Coronary artery bypass surgery (CABG) is advised for select groups of patients with narrowing and blockages of the coronary arteries. CABG creates new routes around narrowed and blocked arteries using grafts, allowing sufficient blood flow to deliver oxygen and nutrients to the heart muscle. Although in most cases open heart surgery is preferred, less invasive techniques may be used, including off-pump procedures and keyhole surgery.

The cardiac surgery department at Baylor University Medical Center has been fine-tuned from years of experience treating routine CABG patients to complex cases that were previously denied treatment by other centers. Nationally known for award-winning quality, the multidisciplinary team of clinical specialists are also involved in research that allows the team to provide innovative cardiovascular treatment.

**Convergent procedure**

In fiscal year 2021, Baylor Dallas became one of the first hospitals in Dallas-Fort Worth to offer the Convergent procedure. The Convergent (hybrid ablation) procedure includes both epicardial and endocardial ablation and combines the expertise of both a cardiothoracic surgeon and an electrophysiologist to treat more persistent forms of atrial fibrillation. The procedure is usually performed in two stages, two to six weeks apart. The hospital also offers a Heart Rhythm Center to manage patients with complex arrhythmias of the heart.

*For more information on Convergent or complex arrhythmia treatment, call the Heart Rhythm Center at 214.820.5306.*

Procedure	FY21
CABG	376
Valve (AVR)	80
Valve (AVR) w/CABG	13
Percutaneous valve	174
Thoracic aorta & AAA	118
Maze	10
VAD	50
Transplant	63

CABG mortality rate (FY21): **1%**

Total open heart surgeries performed (FY21): **884**

**Specialized care team**

Dedicated care provided by the entire surgical team is critical to the patient's outcomes, including continuous coverage by a specialized care team. Expertise provided by the cardiac surgery team includes:

- Intensive care specialists provide 24/7 critical care coverage
- Cardiovascular anesthesiologists are fellowship-trained and board-certified in transesophageal echocardiography (TEE)
- As a quaternary care center, Baylor University Medical Center has the infrastructure and physician experience to provide quality care to the most complex cases referred to the Dallas campus from across the country

The members of the Department of Cardiac Surgery participate in a vast array of operations and specialty centers. The team conducts open cardiac operations as well as minimally invasive approaches, percutaneous valve procedures, thoracic aortic procedures, and operations for heart failure, heart transplant and assist devices. Members of the department are active in the Aortic Center, Center for Valve Disorders, Cardiovascular Second Opinion program, Heart Rhythm Center, and Hispanic Cardiovascular Institute.

**High-risk meetings**

Every surgical patient presents a unique set of challenges, and the cardiac surgical team is committed to providing personalized treatment. The weekly high-risk meetings allowed specialists, from all levels of patient care, to weigh in on a specialized treatment plan for each patient. From cardiothoracic anesthesiologists to perfusionists and ECMO specialists, the diverse team of experts is specifically equipped for the most complex heart cases.

**A commitment to education**

**Visiting Professor Program**

Baylor Scott & White Heart and Vascular Institute Visiting Professor Program hosts prestigious cardiac surgeons from around the nation to share knowledge and techniques with the members of the Department of Cardiac Surgery. The program provides attendees with current and evidence-based information on a topic related to cardiovascular surgery. Baylor Scott & White Heart and Vascular Institute Visiting Professor Program occurs multiple times through the year and is generously supported by the Baylor Scott & White Dallas Foundation.



**Surgeons featured on HeartSpeak podcast**

Cardiac surgeons on the medical staff at Baylor Dallas commit to providing educational content related to cardiovascular surgery to patients as well as the public. Members of the department are featured on the podcast, HeartSpeak, discussing topics such as coronary artery bypass graft in both English and Spanish, mitral valve disease and aortic dissections. Listen and subscribe to HeartSpeak wherever you listen to podcasts to hear from the hospital's subject matter experts.



The Cardiovascular Second Opinion Program is available on the Dallas campus as a result of patients seeking second medical opinions for cardiovascular disease diagnoses, treatment options or surgical recommendations. Our team understands securing a second opinion often helps patients find greater peace of mind regarding a new diagnosis or a pending surgery. As a trusted resource for cardiovascular care, patients have been seeking advice from specialized physicians on the medical staff for more than two decades.

The team with the Cardiovascular Second Opinion Program assists in the coordination of appointments with specialists on the medical staff and any additional follow-up, including diagnostic testing that may be required. The clinicians are committed to help patients throughout the patient journey from the time of diagnosis through procedure or surgery and post follow-up care in collaboration with individual physician offices.

### Conditions and procedures

Newly diagnosed patients facing major surgery or an interventional procedure may wish to research options or find additional experts to provide resources. The navigation team working with the Cardiovascular Second Opinions program connects patients with specialists on the medical staff to address their concerns. Patients may request a virtual second opinion for the following diagnoses and procedures:

- Abdominal or aortic aneurysms
- Aortic valve disease
- Arrhythmias
- Bypass surgery
- Cardiac catheterization
- Cardiomyopathy
- Carotid stenosis
- Heart failure
- Mitral valve disease
- Thoracic outlet syndrome
- Other cardiovascular disease diagnoses



### Advanced treatment options

Patients who are seeking a second opinion may wish to explore treatment options or technology that may not be readily available in their immediate area. As a part of Baylor Scott & White Health, through Baylor Scott & White Research Institute, patients may have options available via clinical trials available on the Dallas campus. The program supports patients from Texas, Louisiana and Oklahoma, as well as across the US and internationally.

**To request a second opinion, email [CV2Opinion@BSWHealth.org](mailto:CV2Opinion@BSWHealth.org).**



The Aortic Center at Baylor Scott & White Heart and Vascular Hospital – Dallas, comprised of vascular surgeons on the medical staff as well as cardiac surgeons on the medical staff at Baylor University Medical Center, is one of only a few programs that bridges the gap between these two acute specialties. The team collaborates with one another, as well as with patients' referring physicians, to determine treatment plans based on age, medical history, type and stage of aortic disease.

The multidisciplinary team specializes in the full spectrum of care for patients with aortic disease. Some critical conditions, such as aortic dissection or ruptured abdominal aortic aneurysm, require emergent care. In other cases, following assessment in the Aortic Center, a patient can electively and selectively choose the timing for intervention.

From medical management to second opinions and aortic dissections, the team collaborates on cases involving the aorta to provide quality care for the patient. The proven experience and involvement with innovation and clinical trials in the area of aortic diseases also provide patients and referring physicians with access to advanced treatments and techniques.

#### Aortic Center medical staff physician team (FY21):

Cardiac Surgery:

- Dan Enter, MD
- Aldo Rafael, MD
- Charles S. Roberts, MD

Vascular Surgery:

- Hung Chu, MD, RPVI
- Robert S. Corn, MD, RPVI
- John F. Eidt, MD, RVT, RPVI, FACS
- Brad Grimsley, MD, FACS
- Stephen Hohmann, MD, FACS
- Bertram Smith, MD, FACS
- Javier (Jay) Vasquez, MD, RPVI, FACS

#### Advanced treatment options offered through the Aortic Center include:

- Surgery with neurocerebral and spinal cord protection protocols
- Reconstruction of the aortic root with aortic valve-sparing techniques
- Complex arch and hybrid aortic arch reconstruction
- Advanced medical management strategies to control blood pressure and reduce inflammation and expansion of the aorta

#### Physicians treating patients with these conditions may need to be aware of a patient's risks for the aorta to dilate or the potential for life-threatening aortic dissection:

- Degenerative aneurysm disease
- Type A and B aortic dissections
- Hypertension
- Bicuspid aortic valve
- Genetic conditions, such as Marfan syndrome
- Inflammatory aortic disease
- Bicuspid aortic valve
- Vascular anomalies
- Connective tissue disorders, such as Ehlers-Danlos disorder, polychondritis, scleroderma, osteogenesis imperfecta, polycystic kidney disease, and Turner syndrome

**Refer a patient: 214.820.4876 or email [DallasAorticCenter@BSWHealth.org](mailto:DallasAorticCenter@BSWHealth.org).  
Refer an emergent aortic aneurysm: 214.820.6444 (Acute Transfer Center).**



*Baylor Scott & White Heart and Vascular Hospital – Dallas was rated High Performing in Abdominal Aortic Aneurysm Repair by U.S. News & World Report for 2021-22.*

**Volumes for abdominal aortic procedure by approach (FY21)**

Open aorta:  
**13**

Endovascular aorta:

**34**

**Volumes for thoracic aortic procedure by approach (FY21)**

Open aorta:  
**63**

Endovascular aorta:

**43**



2,496 Total vascular surgery cases (FY21)

96 Total TCAR procedures (FY21)

TOP 10 TCAR program by volume in the US (FY21)



**3-Star Rating: VQI Participation**

The Vascular Quality Initiative (VQI) is a collaboration of regional quality groups designed to improve the quality, safety, effectiveness, and cost of vascular healthcare by collecting and analyzing information. This allows centers and providers to compare their performance to regional and national benchmarks. The VQI is governed by the Society for Vascular Surgeons (SVS) Patient Safety Organization (PSO), which provides oversight of data sharing arrangements, key outcome and quality measure analyses, and dissemination of information to participating providers.

Published in April 2021, through the participation of the VQI database, Baylor Scott & White Heart and Vascular Hospital - Dallas received the 2020 VQI Participation Award\* in the form of three stars, the highest rating available. VQI centers are eligible to receive up to three stars depending on the extent of their participation in four categories:

- Rate of long-term follow-up reporting
- Physician attendance at regional quality group meetings
- Quality improvement activities
- Number of VQI registries subscribed, which provides opportunities for learning and improvement

\*Per VQI: This award does not represent the quality of care delivered but rather is a measure of VQI participation.

**Diagnostic testing**

To diagnose carotid artery disease, Baylor Scott & White Heart and Vascular Hospital - Dallas offers tests including carotid ultrasound, carotid angiography and computed tomography angiography (CT angiography). CT angiography allows vascular surgeons to visualize the carotid arteries and may include the use of contrast dye.



World-renowned vascular surgeons on the medical staff of Baylor Scott & White Heart and Vascular Hospital - Dallas perform complex and minimally invasive procedures to treat patients for circulation-related occlusive cerebrovascular disease, thoracic and abdominal aorta diseases or disorders, or lower extremity circulatory disorders. The surgeons are also known for their ability to provide surgical access for complex dialysis access patients. Clinical staff experienced in managing vascular surgery patients work closely with the vascular surgeons.

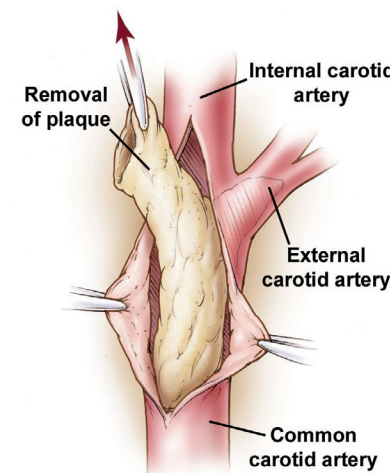
The vascular surgeons on the medical staff have special expertise and years of experience in several key procedures and have often led the nation in the number of procedures performed for diverse thoracic and abdominal aorta procedures and cerebrovascular circulation-related occlusive disease, utilizing open and endovascular methods and minimally invasive treatments for venous diseases. Capabilities include a wide array of endovascular procedure options for patients with deep vein thrombosis (DVT) and patients with aneurysms and vascular malformations.

- Arterial thrombolysis
- Iliac, femoral, popliteal, and below the knee angioplasty and stenting
- Renal and mesenteric angioplasty and stenting

**Carotid endarterectomy**

At Baylor Scott & White Heart and Vascular Hospital - Dallas, vascular surgeons on the hospital's medical staff diagnose and treat patients who may need surgical intervention for atherosclerotic plaque buildup in the carotid arteries. The main treatment for plaque buildup is carotid endarterectomy (CEA). Patients unable to undergo CEA for various medical reasons may benefit from another procedure, carotid angioplasty and stenting, to restore blood flow and cover the obstructing plaque. Vascular surgeons on the medical staff at the hospital have been involved in years of research and clinical studies related to carotid stenting devices and techniques.

Patients who receive TCAR experienced positive outcomes as was noted in a study presented at the Society for Vascular Surgeons annual conference. Overall results appear to be better than traditional carotid endarterectomy and carotid surgery with the greatly reduced potential of strokes and myocardial infarctions. Based on these results, TCAR may well prove to be the appropriate treatment of choice for carotid disease patients.



96 TCAR procedures (FY21)

**Peripheral artery disease and peripheral vascular disease**

Atherosclerosis of the peripheral arteries—peripheral artery disease (PAD) or peripheral vascular disease (PVD)—is a growing health issue in America. Vascular surgeons on the medical staff of Baylor Scott & White Heart and Vascular Hospital - Dallas successfully diagnose and treat thousands of patients annually for PAD and PVD issues. The experience of vascular surgeons on the medical staff extends to conditions, such as:

- Peripheral artery disease (PAD)
- Intestinal ischemic syndrome
- Renovascular occlusive disease
- Popliteal entrapment syndrome
- Hypercoagulable states
- Deep vein thrombosis (DVT)
- Pulmonary embolism
- Axillo-subclavian vein thrombosis

**Transcarotid artery revascularization**

Vascular surgeons on the hospital's medical staff are in a small national group of surgeons trained in transcarotid artery revascularization (TCAR). TCAR combines the safety and reliability of open carotid endarterectomy with the less invasive features of carotid stenting. Baylor Scott & White Heart and Vascular Hospital - Dallas is one of the highest procedure volume TCAR sites in the nation. As such, it has become a TCAR training site for vascular surgeons from around the country.

Outcomes published in the most recent regional quality report for calendar year 2020 procedures included the following results indicating the hospital performed better than the expected rate and the region's observed rates:

	VQI overall	Region	BSWHVH expected	BSWHVH observed	<p>BETTER THAN EXPECTED</p>
Non-ruptured open AAA in-hospital mortality	4.6%	3.6%	1.9%	0.0%	
Carotid endarterectomy symptomatic: stroke/death in hospital	1.8%	1.9%	2.4%	0.0%	
Carotid endarterectomy asymptomatic: stroke/death in hospital	0.9%	0.6%	1.4%	0.0%	
Transfemoral carotid artery stent symptomatic: stroke/death in hospital	4.8%	3.6%	2.8%	0.0%	
Transfemoral carotid artery stent asymptomatic: stroke/death in hospital	1.4%	2.6%	1.7%	0.0%	

Procedures performed between Jan. 1, 2020 and Dec. 31, 2020, at Baylor Scott & White Heart and Vascular Hospital - Dallas (BSWHVH).



**New treatments and technology for PAD**

Baylor Scott & White Heart and Vascular Hospital – Dallas is a leader in the comprehensive management and treatment of PAD with a vascular surgery program that spans decades on the Dallas campus. Vascular surgeons on the hospital’s medical staff use a wide variety of catheter-based therapies to diagnose and treat PAD. A hybrid imaging suite provides physicians with the capability of placing drug-coated stents in blocked arteries using minimally invasive approaches.

Lower extremity PAD can be especially serious and challenging. Vascular surgeons on the hospital’s medical staff see patients from throughout North Texas and the nation for this condition and may perform an angioplasty, place a stent, or perform a bypass. In other cases, the vascular surgeon may opt for using a thrombolytic agent to dissolve a blood clot that may be blocking an artery.

One of the newest technologies pioneered at Baylor Scott & White Heart and Vascular Hospital and is now being employed against PAD is extracorporeal shockwave therapy. The procedure involves introducing a balloon-tipped catheter into the blocked artery. The balloon is expanded, and sonic pressure waves are created that break up the calcium plaque blockage in the artery wall. This minimally invasive technology provides instant pain relief and restores the use of the patient’s lower extremities.

*Lower leg bypass readmit rate (FY21)*

National CMS rate*	BSWHVH - Dallas	
24.0%	10.76%	

\*Most recently published rate by CMS is dated 2016 for this patient population.



**Clinical trials**

With a robust research program encompassing a wide array of studies and clinical trials on the Baylor Scott & White Heart and Vascular Hospital – Dallas campus, the vascular surgeons on the medical staff continue the tradition of being innovative pioneers in vascular medicine and surgery.

One of the studies in fiscal year 2021 is WAVE. This study is a prospective, randomized, controlled, multicenter study comparing the merit WRAPSODY endovascular stent graft to percutaneous transluminal angioplasty for treatment of venous outflow circuit stenosis or occlusion in hemodialysis patients. The principal investigator is Stephen Hohmann, MD.

Another study on the Dallas campus and one of the top enrolling sites is the NEUROS study. The objective of this study is to evaluate a high-frequency nerve block for post-amputation pain. Participants of this study with at least one amputated lower limb are implanted with an investigational device that includes a cuff electrode which gently coils around the identified nerve. A generator, similar to a pacemaker, works with the cuff electrode to deliver an electrical signal to the nerve. The principal investigator for this study is John Eidt, MD.

**For more information and a complete list of updated clinical trials:** [BSWHealth.com/research/clinical-trials](https://www.bswhealth.com/research/clinical-trials).

**Supervised exercise therapy for PAD**

Patients with PAD are eligible to receive supervised exercise therapy (SET) if diagnosed with PAD caused by arterial insufficiency and if classic intermittent claudication is present. Exercise training helps slow the decline in the ability to function and move through daily activities. Offered through cardiac rehabilitation at both the Dallas and Fort Worth locations, the program is called SET for PAD. Benefits of SET for PAD include improvement in functional capacity, decreased pain, increased leg strength, and reduction of additional risks associated with PAD. Patients are encouraged to complete three exercise sessions per week supervised by an exercise therapist over the course of eight to 12 weeks.

**For more information about SET for PAD, please call 214.820.2109.**

**Complex dialysis access**

Clinical studies and continued research in the area of complex dialysis access is a mainstay for the vascular surgery division. In fiscal year 2021, vascular surgeons on the hospital’s medical staff continued to see an increasing number of referrals from throughout Texas and the greater Southwest region for complex dialysis access procedures. The team continues to support the National Kidney Foundation’s “Fistula First” initiative with the goal of providing fistulas for the end-stage renal disease patient population in concert with the goals of the National Kidney Foundation Kidney Disease Outcomes Quality Initiative (NKF NDOQI).

Baylor Scott & White Heart and Vascular Hospital – Dallas was the first site in the US to use the BD WavelinQ™ 4F EndoAVF System, a new and innovative treatment option for patients with End-Stage Renal Disease (ESRD). The technology enables vascular surgeons on the Baylor Scott & White Heart and Vascular Hospital – Dallas medical staff to provide ESRD patients with two additional fistula location options that are less invasive compared to a surgical fistula. Using this approach can help create and maintain AV access for patients on hemodialysis, which is an important expansion of the hospital’s complex dialysis access program.

The CONNECT-AV study is available for interested qualified patients. This is a prospective, multi-center clinical study of the BD WavelinQ EndoAVF System for the Creation of Arteriovenous AV Fistula in Patients Requiring Dialysis (CONNECT-AV). The principal investigator is Stephen Hohmann, MD.

**Thoracic outlet syndrome**

Baylor Scott & White Heart and Vascular Hospital – Dallas is one of the nation’s leading treatment centers for thoracic outlet syndrome (TOS)—a condition where the nerve, artery and vein between the lower neck and upper chest become compressed, causing pain, numbness and weakness in the upper extremity.

Patients who live with daily disabling symptoms secondary to TOS are offered relief with first rib resection, a surgical procedure offered at Baylor Scott & White Heart and Vascular Hospital – Dallas. The first rib resection procedure involves removing part of the first rib, eliminating the pressure on the thoracic outlet. In some cases, blood vessels around the area need to be rerouted; if the vessels are extremely narrowed, angioplasty may become an option.

Types of TOS disorders and related symptoms treated by vascular surgeons on the medical staff at Baylor Scott & White Heart and Vascular Hospital – Dallas include neurogenic thoracic outlet syndrome, venous thoracic outlet syndrome and arterial thoracic outlet syndrome. These vascular surgeons perform hundreds of TOS procedures annually, seeing patients referred from across the US. First rib resection frequently results in a successful return to full activity.

Baylor Scott & White Heart and Vascular Hospital – Dallas is a nationally recognized treatment center for TOS and the program is led by Gregory J. Pearl, MD, FACS, co-medical director for vascular surgery at Baylor Scott & White Heart and Vascular Hospital – Dallas and Baylor University Medical Center.

On a continual basis, the program carefully studies outcomes, following patients for several years. With many of the patients being professional athletes from all over the United States, post-surgery rehabilitation and long-term outcomes have led to a highly regarded and nationally known program. Specifically studying and documenting the history of the program’s success with professional athletes, several notable presentations at virtual national conferences occurred. On several occasions over the past few

**184** Total TOS (FY21) years, Dr. Pearl spoke on the topic at the Major League Baseball conference for owners, coaches and athletic trainers.

**Home to the second oldest vascular surgery fellowship program**

Two fellows are selected annually for the Baylor University Medical Center Vascular Surgery Fellowship Program. One of approximately 100 such programs in the country, the hospital’s Vascular Surgery Fellowship is more than 55 years old, making it one of the most established and most competitive vascular surgery programs in the country. The fellowship has evolved over the years from an apprenticeship type experience to a competency-based education, encompassing a wide array of skills including technical, behavioral and ethical.

In addition, fellows receive multi-faceted experience including simulation, cadaver surgery, simulation surgery, and other training approaches. Stephen Hohmann, MD, FACS, a vascular surgeon on the medical staff of Baylor Scott & White Heart and Vascular Hospital – Dallas, is the current program director.





The advanced heart failure team is dedicated to the treatment of advanced heart failure through its level of care and commitment to research and innovation. The multidisciplinary team includes transplant cardiologists and surgeons on the medical staff, certified heart failure nurses, transplant coordinators, dietitians, social workers, and others. Additionally, the program offers a full spectrum of therapeutic options for heart failure patients, including post-treatment care such as cardiac rehabilitation; patient education focused on medication, lifestyle adjustments and nutrition; and patient and family support groups.

**Mechanical circulatory support**

- Largest LVAD management program in North Texas by volume
- Baylor University Medical Center Ventricular Assist Device (VAD) Destination Therapy Program received the Gold Seal of Approval® from The Joint Commission’s Disease-Specific Care Recertification Survey
- One of seven sites selected for Carmat Total Artificial Heart, a landmark clinical trial and is the only site to offer the FDA-approved total artificial heart in the area
- Baylor Dallas was first in the nation to implant the newly designed EVAHEART® 2 Left Ventricular Assist System (LVAS) with a miniaturized controller system

**50** VAD implantations (FY21)

**Extracorporeal life support**

Baylor University Medical Center is one of the busiest programs in the nation for extracorporeal membrane oxygenation, or ECMO. This labor-intensive treatment is amplified by the multidisciplinary team of specialists with extensive training in this procedure. The partnered approach between cardiology, cardiovascular surgery and vascular surgery allows access for the device to be administered by fellowship-trained vascular surgeons who specialize in vascular cutdown. This increases the quality of care to these acute patients backed by ECMO nurses, intensivists and perfusionists.

Extracorporeal Life Support Organization (ELSO) awarded Baylor Dallas the 2021 Platinum designation—one of only seven facilities in the United States to earn the prestigious honor. The program at Baylor Dallas is in its 10th year and has 17 ECMO machines. The Platinum recognition is based on patient volume—Baylor Dallas has supported nearly 1,000 patients with ECMO—and, more importantly, outcomes and quality improvement.



However, it is not just numbers that sets the program at Baylor Dallas apart. The program also distinguishes itself by being:

- The only hospital in the Dallas-Fort Worth area to provide ECPR in the emergency room, which makes it a primary destination for EMS services transporting these patients
- The only medical center in the region, and one of only a few in the state, with a mobile ECMO team, that can go to other hospitals, put a patient on ECMO and transfer them back to Baylor Dallas
- A heart and lung transplant center that offers ECMO to bridge patients to and from lifesaving procedures

ECMO is a lifesaving treatment for the sickest patients after other options have been exhausted. As the world continues to face the coronavirus pandemic, many facilities are turning to ECMO to treat acute patients suffering from the virus. Baylor University Medical Center cared for 92 COVID-19 positive patients on ECMO with a 63% survival rate better than the 43% international rate. After treatment, patients may experience a prolonged recovery journey and a referral to cardiac rehabilitation.



**Key heart failure-related clinical trials**

Physicians on the medical staff participate in various heart failure trials that pave the way for the future of medicine. For a full listing of current studies, visit the Clinical Trials section in this book.

**APOLLO-B** - Randomized, double-blind, placebo controlled multicenter study to evaluate the efficacy and safety of patisiran in patients with transthyretin amyloidosis with cardiomyopathy (ATTR Amyloidosis with cardiomyopathy). Principal investigator: Parag Kale, MD

**Carmat Total Artificial Heart** - Evaluate the safety and performance of the Carmat Total Artificial Heart in subjects with advanced heart failure requiring biventricular support. Baylor University Medical Center is one of seven sites participating in this bridge-to-transplant study for advanced heart failure patients. Principal investigator: Dan Meyer, MD

**COMPETENCE** - This is a prospective, multi-center, unblinded, randomized, controlled, and non-inferiority study comparing the EVA2 LVAS to the most recent magnetically levitated centrifugal LVAS (HM3 LVAS). Principal investigator: Dan Meyer, MD.

Baylor Dallas was the first in North Texas to implant the EVAHEART®2 LVAS. The hospital was also the first in the nation to implant the device with a miniaturized controller system.

**PARAGLIDE-HF** - A multicenter, randomized, double-blind, double-dummy, parallel group, active controlled 8-week study to evaluate the effect of sacubitril/valsartan (LCZ696) versus valsartan on changes in NT-proBNP and safety and tolerability of in-hospital initiation of LCZ696 compared to valsartan in HFpEF patients with acute decompensated heart failure (ADHF) who have been stabilized during hospitalization. Principal investigator: Shelley Hall, MD

Advanced heart failure and transplant cardiologists on the medical staff at Baylor University Medical Center are contributing on innovative clinical trials for COVID-19, having a deep understanding of treating transplant recipients who have a similar immune response as patients with the virus.

**For more information and a complete list of updated clinical trials:** [BSWHealth.com/research/clinical-trials](https://www.bswhealth.com/research/clinical-trials).

**Baylor Scott & White Advanced Heart Failure Clinic**

Baylor Scott & White Advanced Heart Failure Clinic, located on the campus of Baylor University Medical Center, offers comprehensive services for patients with refractory symptoms. Advanced heart failure cardiologists and transplant surgeons on the medical staff at Baylor University Medical Center provide an array of services, including the medical management of progressive symptoms, medication optimization, mechanical circulatory support device evaluation and placement, access to clinical trials, and heart transplantation.

*Members of the hospital transplantation team evaluate patients by traveling to outreach clinics in Abilene, Amarillo, Longview, Lubbock, and Midland-Odessa.*

**For more information on the Advanced Heart Failure program or to refer a patient: 214.820.6856.**

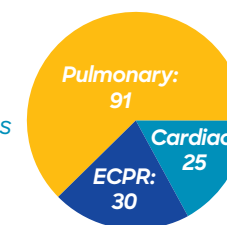
**ECMO support volume**

Calendar year	Total ECMO cases
2020	154
2019	123
2018	112

**ECMO transports**

Calendar year	Total ECMO cases
2020	62
2019	33
2018	24

Total non-COVID-19 ECMO indications count for Baylor Dallas (FY21)



International ECMO survival rate – patients with COVID-19	Baylor Dallas ECMO survival rate – patients with COVID-19	Better, same, or worse than international ELSO registry rate
43%	63%	<b>BETTER</b>

Extracorporeal Life Support Organization’s (ELSO) registry data reflects patients with discharge disposition for timeframe April 1, 2020 through June 30, 2021.



## TOP 10

Heart transplant program in the nation\*

## #1

Heart transplant volumes in Texas\*

Heart transplants since program's inception:

# >1,000

Heart transplants (FY21):

# 68



Accepts high-risk patients declined by other programs



Baylor University Medical Center collaborates with other transplant and heart failure centers, enabling dual listing at two or more centers, reducing candidates' wait times

\* data noted as of fiscal year 2021



In fiscal year 2021, Baylor University Medical Center, part of Baylor Scott & White Health, performed 68 heart transplants, one of the top 10 heart transplant programs in the nation, and was listed for the 23rd consecutive year in the *U.S. News & World Report's* "America's Best Hospitals" issue. The team of professionals is dedicated to the treatment of advanced heart failure, including transplant cardiologists and cardiothoracic surgeons on the medical staff, certified heart failure nurses, transplant coordinator, dietitians, social workers, and more.

The heart transplant program at Baylor University Medical Center is an internationally renowned destination for transplant care with one of the shortest wait times in the country. From the aggressive approach to recipient and donor selection to the dual listing program reducing the wait time for heart transplant candidates and access to clinical trials, the team of cardiac specialists is able to provide lifesaving care for more people.



Mrs. Mary Elkin celebrates 35th anniversary of her heart transplant.

## 1,000 heart transplants milestone

Baylor University Medical Center is a pioneer in organ transplantation. Since the hospital's first heart transplant in 1986, the goal has remained to transform patient lives in our communities. In September 2020, the program reached another milestone. The team, with expertise across advanced heart failure, heart transplantation, mechanical device support, and ECMO, completed its 1,000th heart transplant since the program's inception.

The heart transplantation team performs some of the most complex heart transplant cases, helping patients turned away by other medical centers while also enjoying the shortest wait time from listing to transplant surgery in the state.

# 1,000

*Heart Transplants Milestone*

## Clinical trials

### ALL IN: Targeting Inflammation and Alloimmunity in Heart Transplant Recipients with Tocilizumab

This is a Phase II, prospective, multicenter, randomized, placebo-controlled clinical trial. The primary objective is to assess the efficacy of tocilizumab (Actemra) on post-transplant outcomes. The drug, currently FDA approved for rheumatologic conditions, is hypothesized to improve post-transplant survival rate by reducing incidence of rejection, donor-specific antibodies, and hemodynamic compromise. Principal investigator: Shelley Hall, MD, FACC, FHFA, FAST

### TROJAN-C: Transplant of Redeemed Organs by Judicious Administration of New Direct-Acting Antivirals for Hepatitis-C Heart Recipients

This Phase II, multicenter, open-label study will evaluate the safety and efficacy of utilizing HCV-positive donors for heart transplant in HCV-negative recipients treated with sofosbuvir 400 mg / velpatasvir 100 mg (Epclusa®). The primary objective is to increase the number of viable hearts that can be used for transplant, since drugs are available to treat HCV with minimal side effects. Principal investigators: Shelley Hall, MD, FACC, FHFA, FAST, and Robert Gottlieb, MD, PhD, FACC

For more information and a complete list of updated clinical trials, visit [BSWHealth.com/research/clinical-trials](https://www.bswhealth.com/research/clinical-trials).

### Heart-to-Heart program

In 1993, William C. Roberts, MD, MACC, joined the medical staff at Baylor University Medical Center. He is an internationally recognized authority on cardiac pathology. A member of the Baylor Dallas and Baylor Scott & White Heart and Vascular Hospital - Dallas medical staffs, Dr. Roberts is also executive director of the Baylor Scott & White Heart and Vascular Institute, editor-in-chief of *The American Journal of Cardiology*, editor-in-chief of *Baylor University Medical Center Proceedings*, and dean of the A. Webb Roberts Center for Continuing Medical Education.

Seven years ago, Dr. Roberts followed his heart and began a program that has touched the lives of more than 157 heart transplant recipients - Heart-to-Heart. At the request of a patient who received a heart transplant at Baylor Dallas 10 years earlier, Dr. Roberts invited him to see his old heart and hold it in his hands. Patients and family members have participated in these powerful educational sessions by Dr. Roberts. To read more about Dr. Roberts, please see page 72.





The Walter I. Berman Cardiovascular Prevention and Cardiac Rehabilitation Center at Baylor Scott & White Heart and Vascular Hospital – Dallas continues to build upon its national reputation of excellence and innovation. Combining years of experience with insight gained from research, the team shares best practices with hospitals across the US and countries around the world. An extension of the Dallas program’s team, Tarrant County-area residents also benefit from the same quality standards for cardiac and also pulmonary rehabilitation through the Carter Center for Cardiac and Pulmonary Rehabilitation at the Baylor Scott & White All Saints Medical Center – Fort Worth campus.

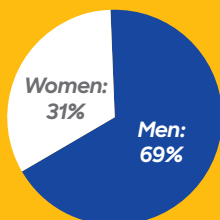
While the world continued to navigate the COVID-19 pandemic, the department took additional precautions to keep patients safe while working to improve the health and well-being of all those who enter the facility. In addition to revamping several aspects of the service line, cardiac rehab incorporated an education series focusing on modifiable risk factors.

**Return to Work Lab: Live Your Action Potential®**

Unique to the program, Return to Work Lab was initiated several years ago to respond to individual patient needs in order to help the patient return to their work life whether that be a fireman, pilot, mechanic, or new mom who experienced a postpartum cardiac event. Rooted solidly in evidence-based protocols from research performed in Dallas, the team customizes rehabilitation for all types and ages of patients. Specifically, the team initiates a care plan that uses the actual equipment and tools the patient would need to handle in their daily work as equipment in the rehabilitation process. The plans also involve nutritional counseling, social support and lifestyle education. Whether a patient is in the early stages of heart disease or a heart transplant recipient, individualized goals are set and milestones are celebrated along the way. Patients have traveled from all over the world for this specialized care. Other patients from outside of the Dallas area have received virtual assistance as they recover and strengthen their cardiac condition closer to their hometown medical team.

**AACVPR certification**

Baylor Scott & White Heart and Vascular Hospital’s cardiovascular rehabilitation program is certified by the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR). AACVPR is dedicated to the professional development of its members, through information, networking and educational opportunities. Central to its mission is the improvement in the quality of life for patients and their families.



Diagnosis	Percent
PCI	32%
CABG	22%
Myocardial Infarction	15%
Valve Surgery	12%
Heart Failure	6%
Transplant	3%
Other	10%

Total patients (FY21): **483**

Sessions completed (FY21): **10,379**

**Supervised exercise therapy**

The supervised exercise therapy (SET) program is designed for peripheral artery disease (PAD) patients who are asymptomatic or have leg pain that prevents activity. A patient may benefit from the program if his or her PAD is caused by arterial insufficiency and classic intermittent claudication is present. The lack of activity in PAD patients can cause worsening cardiovascular risk factors, loss of leg strength and eventually disability.

Clinical trials show SET for PAD can help improve functional capacity, decrease painful symptoms and achieve systemic risk-reduction benefits. Following evidence-based protocols from the Vascular Disease Foundation and the American Association of Cardiovascular and Pulmonary Rehabilitation, the patient may see functional benefits at four to eight weeks with continued improvement over the program’s 12 to 24 weeks. This may be achieved by exercising to the level of mild to moderate claudication pain, which has been shown to produce physiological adaptive changes.\*

\*Source: ACCF/AHA/ACR/SCAI/SIR/SVM/SVN/SVS 2010 Performance Measures for Adults with Peripheral Artery Disease.

To learn more or refer a patient: 214.820.2109.

**Keep Your Move In The Tube®**

Keep Your Move In The Tube® is an innovative approach to cardiac rehab for sternotomy patients. Members of the Baylor Scott & White Heart and Vascular Hospital – Dallas cardiac rehab team have visited other rehab programs globally and nationally to share the theory and techniques of the program.

**Ventricular assist devices patients**

Another unique differentiator from other programs is the individualized care plans developed for patients with ventricular assist devices (VAD), an external mechanical pump that assists the heart pumping blood throughout the body. One of the most challenging cardiac rehabilitation patients for some programs, ventricular assist device patients are generally in a situation whereby they are bridging to heart transplantation and waiting for an appropriate donor. However, some patients who are not heart transplant candidates may live with a VAD as a long-term solution. The cardiac rehabilitation program in Dallas is adept at caring for these patients, helping them gain strength and stamina during their journey while providing necessary support as each patient strives to achieve the highest quality of life with the device. This specialized expertise is important on the Dallas campus as the Ventricular Assist Device

Program at Baylor University Medical Center is one of the largest in the nation. In addition, a variety of cardiac rehab components were the subjects of research studies and clinical trials in fiscal year 2021. The team also continues to be in the forefront of publications and presentations at national conferences.

**American College of Sports Medicine adopts BSWH Research’s sternal guidelines**

The new (11th) edition of the American College of Sports Medicine (ACSM) Guidelines for Exercise Testing and Prescription has shifted the guidelines for individuals with sternotomy to reflect the work by physicians on the medical staff as well as providers, exercise physiologists, physical therapists, and registered nurses at Baylor Scott & White Heart and Vascular Hospital – Dallas. This text is the guiding force for cardiovascular and pulmonary rehabilitation, vascular rehabilitation and many other professions involving exercise in healthy or clinical populations.

The published guidelines reflect years of effort that produced evidence-based change resulting in a paradigm shift for clinicians around the world. Post-CABG patients being encouraged to use their arms and to resume ADL’s more quickly is a practice the cardiac rehabilitation team has implemented in their own program after years of research. These include, “Challenging traditional activity limits after coronary artery bypass graft surgery: a simulated lawn-moving activity” and “An alternative approach to prescribing sternal precautions after median sternotomy, ‘Keep Your Move in the Tube®’”.

**Leap for Life®**

The hospital’s heart disease prevention program, Leap for Life® is comprised of sessions for cardiovascular patients, caregivers and open to the community on heart-healthy topics, risk factor modification and personal goal setting. “Leap” stands for Lifestyle Education Awareness Program and has been offered for 14 years. Classes were offered virtually, and the team looks forward to reinstating in person events in fiscal year 2022 at both our Dallas and Fort Worth locations.

For more information about Leap for Life or other heart-healthy education classes: 1.844.BSW.DOCS or BSWHealth.com/DFWHeartEvents.

**565** Total Leap for Life® participants educated (FY21)





**8,363**

Patient registrations  
(FY21)



**1,869**

Cath lab cases  
(FY21)



**1,997**

EP lab procedures  
(FY21)

**>250**

TAVR implants  
(October 2017 - June 2021)

**>5,200**

Cardiac and pulmonary  
rehabilitation treatments  
(FY21)

At Baylor Scott & White All Saints Medical Center – Fort Worth, the 110-year history of cardiovascular care continues through a collaboration with Baylor Scott & White Heart and Vascular Hospital – Fort Worth. The physicians on the medical staff of Baylor Scott & White Heart and Vascular Hospital – Fort Worth and the team who supports the care of cardiovascular patients realized growth in the number of available treatment options and patient volumes during fiscal year 2021. The number of clinical trials and research projects also grew on the campus, affording residents in the area an opportunity to participate.

The hospital's clinical leadership operates interventional cardiology and electrophysiology services, heart catheterization and electrophysiology labs, including a hybrid procedural suite, as well as non-invasive cardiology services.

All of these services are located on the sixth floor of Building A at Baylor Scott & White – Fort Worth along with pre- and post-procedure rooms, Valve Disorders Center and Heart Rhythm Center areas. Additional patient rooms are located on the fifth floor. The fifth floor addition of 25,816 square feet occurred during calendar year 2018 in order to provide rooms for cardiology patients requiring critical care.

Baylor Scott & White Heart and Vascular Hospital – Fort Worth operates as a department of the Baylor Scott & White Heart and Vascular Hospital – Dallas but with a separate State of Texas ambulatory surgery center license.\* The hospital also has management oversight for the Carter Cardiac and Pulmonary Rehabilitation program.

The listed numbers report the Fort Worth campus activities for fiscal year 2021, unless otherwise noted.

In fiscal year 2021, many patients were in the care of the clinical teams at Baylor Scott & White Heart and Vascular Hospital – Fort Worth for cardiovascular disease through a broad array of treatment options. Collaborating with Baylor Scott & White All Saints Medical Center – Fort Worth, all areas expanded capabilities to treat complex cardiovascular conditions. Patients came from not only the immediate Fort Worth and Tarrant County area, but also from West Texas and beyond.

*“This past fiscal year will be memorable for several reasons. The ability to treat complex cardiovascular patients grew, and a combined record number of TAVRs, mitral valve repairs, coronary interventions, electrophysiology procedures, and cardiac surgeries were performed on the Fort Worth campus.*

*We celebrated an incredible milestone as Baylor Scott & White – Fort Worth announced the affiliation with Texas Christian University and University of North Texas Health Sciences Center (TCU and UNTHSC) School of Medicine to offer Accreditation Council for Graduate Medical Education (ACGME)-accredited physician resident training positions. We received institutional accreditation from the ACGME, and the first sponsored program in Internal Medicine received initial accreditation. This first class of residents will start in July 2021. We are excited to contribute to educating and training the next generation of physicians in our community.*

*The year also brought several additional clinical trials and research to our cardiovascular program. And, of course, the year tested our resilience and adaptability as the COVID-19 pandemic swept into Tarrant County and our entire service area. Through the collective, diligent efforts of all involved in caring for patients on the Fort Worth campus, we are navigating the ever-changing demand to provide safe and quality cardiovascular care for all patients. Baylor Scott & White Health launched COVID-19 Safe Care and we are proud to say that we remained available to care for all cardiovascular patients throughout the remainder of fiscal year 2020.*

**- Mohan Sathyamoorthy, MD, FACC**  
Medical Director of Cardiology – Baylor Scott & White Heart and Vascular Hospital – Fort Worth

**People**

At the foundation of providing quality care and excellent patient experience are the people who care for patients every day – at the bedside – as well as all those in vital supportive roles. The Fort Worth team includes a skilled team of acute care nurse practitioners who work closely with the cardiologists on the medical staff to provide individualized cardiovascular care.

**>80%** All employee retention (FY21)

Learning opportunities occurred throughout fiscal year 2021 with the help of the medical staff and clinical leaders for the cardiovascular team and the staff of Baylor Scott & White – Fort Worth. In addition, in collaboration with area EMS, a special seminar was hosted virtually for EMS and first responders on cardiovascular disease treatment options and recent updates.

Ongoing case reviews are conducted every week during the Structural Heart Disease Program meetings. During these meetings, a thorough clinical review of valve patient candidates from the Valve Disorders Center and other referral centers is conducted by a multidisciplinary team. In fiscal year 2021, the Echocardiography Conferences occurred weekly. These opportunities provide continual education for the entire clinical team including the medical staff. Area clinicians are also invited and special arrangements can be made for inclusion in the conferences virtually.



Baylor Scott & White Heart and Vascular Hospital – Fort Worth is licensed as an ambulatory surgery center (ASC) by the Texas Department of State Health Services and operates as a hospital outpatient department of Baylor Scott & White Heart and Vascular Hospital – Dallas pursuant to the Medicare provider-based facility regulations. Baylor Scott & White Heart and Vascular Hospital includes joint ownership with physicians. Baylor Scott & White All Saints Medical Center – Fort Worth is a separately licensed hospital. Both organizations are a part of Baylor Scott & White Health.



## Patient satisfaction

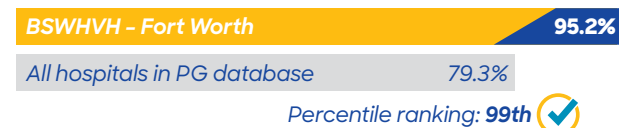
Baylor Scott & White Heart and Vascular Hospital -Fort Worth collaborates with Press Ganey® Associates, Inc. to measure patient satisfaction across the patient experience continuum. The goal is to support patient satisfaction that reflects service excellence since the results have a direct correlation to quality and safety outcomes. In addition, during fiscal year 2020, a COVID-19 Safe Care plan was implemented. The plan's goal was to help keep all those who entered the hospital safe as we navigated through the pandemic.

The patient satisfaction scores and patients' comments are regularly reviewed by the hospital's Board of Managers, hospital care teams and medical staff. At least once a week, all leaders review the latest scores and read comments in order to focus improvement efforts. Positive comments are shared with the team to recognize success and service excellence.

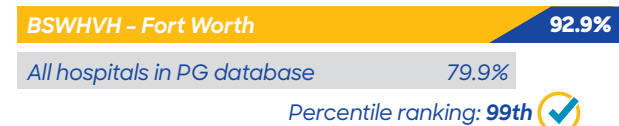
The following scores represent the outcomes of the ambulatory surgery patient experience for Baylor Scott & White Heart and Vascular Hospital - Fort Worth.

**Ambulatory surgery patient experience (FY21)**  
Patients who gave a rating of 9 or 10 on a scale of 0 to 10

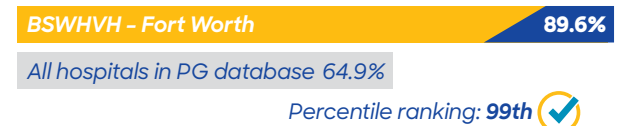
Overall Satisfaction: Communication with Nurses



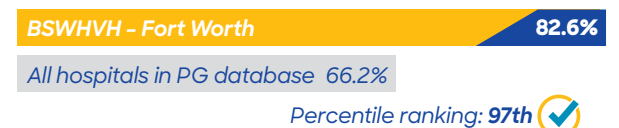
Overall Satisfaction: Communication with Physicians



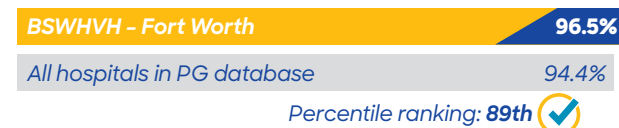
Response of hospital staff



Hospital Environment: Cleanliness and Quietness



Outpatient Surveys Results: Likelihood to Recommend



## FORT WORTH SERVICES AND PROGRAMS

### Non-invasive cardiac services

**>8,500** Total non-invasive procedures performed (FY21)

Baylor Scott & White Heart and Vascular Hospital's Department of Non-Invasive Cardiac Services uses various approaches and available technology to help diagnose heart disease as used by the physicians on the medical staff. Non-invasive cardiac services available include:

- Exercise stress tests
- Holter monitoring
- Metabolic stress testing
- Pharmacological/exercise stress tests
- Echocardiograms
- Transthoracic echocardiograms
- Transesophageal echocardiograms

**6,117** Transthoracic echocardiograms (FY21)

**594** Transesophageal echocardiograms (FY21)

Committed to education and knowledge sharing, the team in non-invasive cardiac services at Baylor Scott & White Heart and Vascular Hospital - Fort Worth launched The Sonographer Education Conference in fiscal year 2021. This virtual educational event was created to ensure knowledge and technique follows national standards and guidelines set forth by the American Society of Echocardiography. The conference is completely sonographer driven with different speakers every week and a newsletter summarizing the presentation. Topics are precise and limited to specific points of interest using actual images and case studies, such as: measuring LA Volume Index (LAVI) or Identifying the Mechanism of Mitral Regurgitation. Critical thinking is developed through the discussions which are led by our own experts.

The department celebrated the nationally recognized achievements by team members in fiscal year 2021 including department supervisor, Marie "Bunny" Owens, RDCS, RVT, who passed the American Society of Echocardiography board exam to become one of only 130 Advanced Cardiac Sonographers (ACS) in the US. She received the designation of Fellow - American Society of Echocardiography (FASE). In addition, others on the team have received specialized recognition and certification.

The American Society of Echocardiography is a global organization with more than 17,000 professional members, comprised of physicians, sonographers, nurses, veterinarians and scientists, and sets the standards and guidelines we practice in the field of cardiovascular ultrasound today. Only those who have demonstrated an extraordinary commitment of education, research and earn the FASE designation.

The ACS exam is the most difficult in the field of echocardiography for sonographers and demonstrates a profound knowledge and advanced level of critical thinking needed to perform advanced procedures. In some roles across the country, the ACS functions as an advanced practice sonographer, providing preliminary findings and interpretations to cardiologists.

**1,997** EP procedures (FY21)

**879** EP cases (FY21)

**>400** Pacemakers/ICDs implanted (FY21)

**112** LAAO procedures (FY21)

## Cardiac electrophysiology

As a part of the comprehensive cardiovascular services on the Fort Worth campus, the electrophysiology (EP) program and the electrophysiologists on the medical staff are known for their expertise in treating all types of heart rhythm disorders from arrhythmia to atrial fibrillation and ventricular tachycardia.

These EP specialists on the medical staff are recognized for their ability to provide left atrial appendage closure device as a treatment option. Known as LAAO, a device is implanted in patients who have been diagnosed with atrial fibrillation using a minimally invasive technique. Over time, the LAAO device works to lower the risk of stroke in heart rhythm disorder patients and these patients are able to decrease the amount of blood thinner medication prescribed prior to the procedure.

### The LAAO device is suitable for patients with nonvalvular atrial fibrillation who:

- Are at increased risk for stroke and systemic embolism based on CHADS2 or CHADS2-VASc scores and are recommended for anticoagulation therapy
- Have an appropriate rationale to seek a non-pharmacologic alternative to oral anticoagulation, taking into account the safety and effectiveness of the device compared to warfarin

Electrophysiologists on the medical staff received patient referrals from throughout the region for precise diagnosis and treatment of rhythm disorders using ablation therapy. The use of advanced mapping systems for signal analysis coupled with the experience of the electrophysiologists results in a more accurate identification of the abnormal rhythm circuit, eliminating it both safely and effectively.

In fiscal year 2021, patients who qualified had an opportunity to enroll in recent clinical trials focused on atrial fibrillation.

Led by Craig Delaughter, MD, PhD, FACC, FHRS, medical director for electrophysiology at Baylor Scott & White Heart and Vascular Hospital - Fort Worth, the open clinical trials in fiscal year 2021 included:

- AMPLATZER™ Amulet LAA Occluder Trial (Amulet IDE) - The study objective is to compare the new device to other LAA closure devices in a randomized 1:1 ratio study.

- **OPTION** - A study to determine if left atrial appendage closure with the Watchman FLX device is a reasonable alternative to oral anti-coagulation following percutaneous catheter ablation for high-risk patients with non-valvular atrial fibrillation who have an appropriate rationale to see a non-pharmacologic alternative to chronic oral anticoagulation. The principal investigator is Craig Delaughter, MD.
- **WaveCrest** - A study to evaluate the safety and effectiveness of the WaveCrest device in subjects who have atrial fibrillation by comparing it to a similar left atrial appendage closure device. Joining principal investigator, Dr. Delaughter, is interventional cardiologist on the medical staff Farhan Ali, MD.

For more information and a complete list of updated clinical trials: [BSWHealth.com/research/clinical-trials](https://www.bswhealth.com/research/clinical-trials).

Through the pandemic months of fiscal year 2021, Baylor Scott & White Heart and Vascular Hospital - Fort Worth experienced a strong volume of implantable cardioverter defibrillators (ICDs) and cardiac resynchronization therapy (CRT).

**Highlights for the department include:**

- MRI compatible ICDs are routinely used, allowing patients and their physicians to use this modality for diagnostic imaging even after ICD implantation.
- Available CRT devices provide multipoint pacing, a “next generation” form of CRT that paces the ventricles from three sites instead of two. This form of pacing has been shown to increase the clinical response rate of heart failure patients in early clinical trials.
- Treatment options include leadless pacemakers that are implanted using femoral access and are entirely contained within the heart itself.

**Specialized interventions include:**

- **Pacemaker implantation** - Advanced technologies include MRI scan compatible devices, cellular network home monitoring with wireless communication and the catheter-delivered leadless pacemaker
- **ICD implantation** - Offering MRI scan compatibility, cellular network home monitoring with wireless communication and subcutaneous ICD
- **Cardiac resynchronization therapy (CRT) or biventricular pacing** - Particularly helpful for advanced heart failure patients, CRT sends small electrical impulses to the heart muscle to allow the ventricles to contract together, which may improve cardiac function

- Left atrial appendage closure devices
- Ablation - Offering a variety of ablation techniques including radiofrequency or cryoenergy ablation, which converts abnormal heart electrical tissue to scar tissue and corrects abnormal circuits
- Lead extraction

**Heart Rhythm Center - Fort Worth**

Launched by a desire to bring a multidisciplinary approach to complex heart rhythm disorders in Tarrant County and the surrounding area, this center provides personalized care for patients who are either newly diagnosed with a heart rhythm disorder or who may have been living with a heart rhythm disorder and wish to seek a second opinion or learn more about various treatment options available to them. Referrals to the center come from a variety of medical specialists in the area who are also seeking specialized expertise for the ongoing treatment of a complex heart rhythm disorder patient situation.



Whether the referral comes from a physician, advanced practice provider or directly from a patient, the specialized team provides providers and patients with information on heart arrhythmias and evidence-based treatment options, including medication therapy, catheter-based procedures and, if necessary, surgery. Patients benefit from accurate diagnoses and treatment of irregular heartbeat conditions, such as atrial fibrillation, ventricular tachycardia, atrial flutter, atrial tachycardia, PACs and PVCs, and other related arrhythmias.

Collaborating with emergency department physicians on the medical staff and the clinical team of Baylor Scott & White - Fort Worth, the Heart Rhythm Center clinicians identify patients who may have need for follow-up. Since the potential for elevated stroke risk is a concern for many arrhythmia patients, early diagnosis and treatment is critical.

For more information about the Heart Rhythm Center: **817.825.1374**.

**Interventional Cardiology**

The regional reputation for the interventional cardiology services at Baylor Scott & White Heart and Vascular Hospital - Fort Worth continues to grow as the referrals have grown over the past several years. PCI continues to be the favored treatment option for patients with simple and complex ischemic cardiovascular disease. With advanced equipment and a broad complement of stents available, including the availability of the smallest drug-eluting stent at 2mm, interventional cardiologists on the medical staff collaborate closely with referring providers on the treatment options available for patients.

During fiscal year 2021, during the pandemic, the volumes remained stable and consistent. Protocols as a part of the Baylor Scott & White Safe Care Plan were instituted. The members of the medical staff, alongside the entire team on the Fort Worth campus, were diligent in efforts to assure cardiovascular patients that care should not be delayed during the pandemic.

Several interventional cardiology “firsts” have been celebrated at Baylor Scott & White - Fort Worth. This past year, one of the more notable “firsts” included being the first in Fort Worth and Tarrant County to use intravascular lithotripsy for the treatment of severely calcified coronary artery plaques.



Farhan Ali, MD, MA, MPH, FACC, FSCAI, RPVI, medical director for interventional cardiology for Baylor Scott & White Heart and Vascular Hospital - Fort Worth, announced in April 2021 that the first use of Shockwave Coronary IVL System in Fort Worth occurred in the hospital’s cath lab. This new system is a new, innovative technology for the treatment of cardiac patients and was recently approved by the FDA for the treatment of severely calcified coronary artery plaques. The therapy is similar to the therapy used to break up kidney stones and is known as

Intravascular Lithotripsy (or IVL). The device uses a balloon to deliver sonic pressure waves that can pass through soft arterial tissue to “preferentially disrupt” calcified plaque and optimize stent placement. This allows for a safer delivery of stents. As of the date of this printing, this was the only commercially available modality of this type available.

The Journal of the American College of Cardiology (JACC) published an article in 2021 that stated patients with an advanced form of coronary artery disease (CAD) benefited from treatment that used sonic pressure waves to break up hardened blockages in the heart.

**1,869** Total cath cases - Fort Worth (FY21)

**407** PCI Procedures - Fort Worth (FY21)

Percutaneous coronary intervention*	US Registry 90th percentile	BSWHVH - FW	Better, same or worse than US 90th percentile
PCI within 90 minutes (patients with STEMI)	100%	100%	SAME
Median time to immediate PCI for STEMI patients (in minutes)	51 minutes	51 minutes	SAME
Median transfer time from door-to-door (patients with STEMI)	51 minutes	49 minutes	BETTER
Median time to immediate PCI (transfer patients with STEMI)	86 minutes	71 minutes	BETTER
Percutaneous coronary intervention*	US Registry 75th percentile	BSWHVH - FW	Better, same or worse than US Median
Composite: Major adverse events (all patients)	1.81	1.16	BETTER
Composite: Major adverse events (select PCI patients)	1.70	1.20	BETTER

\*National Cardiovascular Database and Registry (NCDR) Baylor Scott & White Heart and Vascular Hospital - Fort Worth. Source: R4Q through 2020 Q4 published information



## Regional STEMI Program – Tarrant and surrounding counties

Baylor Scott & White All Saints Medical Center – Fort Worth has a robust regional STEMI program, collaborating with area free-standing emergency departments, urgent care centers and community hospitals to provide quick treatment for patients who experience a STEMI (segment elevation myocardial infarction). Patients are transported to the emergency department and directly admitted to the Baylor Scott & White Heart and Vascular Hospital – Fort Worth cath lab for rapid intervention. Baylor Scott & White – Fort Worth was awarded the Gold Seal from The Joint Commission for Chest Pain Certification during the recertification process in fiscal year 2021. Only after a thorough review of performance for acute myocardial infarction (AMI) and acute coronary syndrome (ACS) and a determination made that the program exceeds the high standards set forth by the Joint Commission is this Gold Seal and certification granted.



**177** Total number of AMIs – Fort Worth (FY21)

**98.5\*** Acute AMI performance composite (FY21)

\*National Cardiovascular Database and Registry (NCDR\*)  
Baylor Scott & White Heart and Vascular Hospital – Fort Worth.  
Source: R4Q through Q1 2021.



## STRUCTURAL HEART DISEASE PROGRAM

The entire cardiovascular team at Baylor Scott & White Heart and Vascular Hospital – Fort Worth is proud to have launched the first Structural Heart Program in all of Tarrant County. It is the most comprehensive Tarrant County Structural Heart Disease Program as determined by cardiologists and cardiothoracic surgeons on the medical staff.

A multidisciplinary team of experienced cardiologists, cardiothoracic surgeons, interventional cardiologists, electrophysiologists and imaging specialists on the medical staff, along with our specialized nurses, combine their expertise with advanced technologies to treat a variety of patient conditions that are considered within the category of structural heart disease. The medical director of the Structural Heart Disease Program is George S. Khammar, MD, FACC.

**250** Total number of TAVR implants (Oct 2017 – June 30, 2021)

**0** Number of strokes associated with TAVR patients (FY21)

**0** 30-day In hospital mortality (FY21)

**0** 30-day All cause mortality (FY21)

### Conditions treated include:

- Ascending aortic aneurysms and dissections
- Atrial septal defects (ASD)
- Heart valve disease – abnormalities, valve insufficiency, regurgitation, stenosis and damaged artificial valves
- Hypertrophic cardiomyopathy
- Left atrial appendage thrombus
- Patent foramen ovale (PFO)
- Prosthetic valve paravalvular leaks
- Ventricular septal defects (VSD)

### Specialized treatments offered:

- Atrial septal defect (ASD) closure
- Left atrial appendage occlusion (LAAO)
- Minimally invasive surgical repair of structural heart defects
- Minimally invasive tricuspid valve repair
- Patent foramen ovale (PFO) catheter repair
- Port access minimally invasive aortic valve replacement
- Transcatheter aortic valve replacement – minimally invasive (TAVR)
- Transcatheter mitral valve repair – minimally invasive (TMVR)
- Robotic cardiothoracic surgery\*\*
- Surgical repair of ascending aortic aneurysms and dissections\*\*

\*\* Surgical procedures performed within Baylor Scott & White All Saints Medical Center – Fort Worth. All other procedures are performed on the same campus but within Baylor Scott & White Heart and Vascular Hospital – Fort Worth.

### Valve Disorders Center

A part of the comprehensive Structural Heart Disease Program, the Valve Disorders Center at Baylor Scott & White Heart and Vascular Hospital – Fort Worth reached a milestone of performing more than 250 TAVRs in early July 2021 – the total since its beginning in late October 2017. With referrals coming from all over Tarrant County and the western region of Texas, the Valve Disorders Center is comprised of a multidisciplinary team of clinicians. Led by medical director Dr. Khammar, the multidisciplinary team meets to review each potential patient’s case and determine the most appropriate approach to valve repair or replacement.

### Therapies available include:

- Transcatheter aortic valve replacement (TAVR)
- Transcatheter mitral valve repair (TMVR), especially for high surgical risk patients with severe mitral regurgitation
- Minimally invasive aortic, mitral, pulmonic and tricuspid valve repair and replacement using sternal sparing, port-access approaches
- Transcatheter valve-in-valve implantation for failed bioprosthetic valves in the aortic and mitral valves

The Valve Disorders Center is supported by a team of nurse practitioners, registered nurses, coordinators and data analysts who continually review and report outcomes. Valve Disorders Center medical staff members in fiscal year 2021 included:

### Interventional cardiologists:

- Farhan Ali, MD, MA, MPH, FACC, FSCAI, RPVI
- Sukesh Burjonrappa, MD, FACC, FSCAI
- Vijay Kalaria, MD, FACC, FSCAI
- Abdul Keyhani, MD
- Amir Malik, MD, FACC, FSCAI

### Cardiothoracic surgeons:

- Reza Khalafi, MD, FACS, FCCP
- Anita Krueger, MD
- Jeffrey Wu, MD

**24/7 referral line and patient support: 817.825.1374.**

**Email questions to: [BHVHValveCenterFW@BSWHealth.org](mailto:BHVHValveCenterFW@BSWHealth.org).**

### Mitral Valve Program

Collaborating with the cardiothoracic surgeons on the medical staff of Baylor Scott & White – Fort Worth, the mitral valve program’s specialists treat both degenerative mitral valve disease as well as functional mitral valve conditions. Other patients may present with:

- Degenerative disease or congenital anomalies
- Ischemic cardiomyopathy
- Acute endocarditis
- Carcinoid heart disease
- Mitral annular calcifications

**Treatment options:**

- Medical management
- Percutaneous balloon valvuloplasty
- Percutaneous mitral balloon commissurotomy or surgical commissurotomy
- Valvulotomy
- Transcatheter procedures
- Minimally invasive procedures
- Surgical repair or replacement

Although mitral valve repair is more surgically complex than replacement, it reduces the need for blood thinners and complications of prosthetic valves. Research indicates early mitral valve repair leads to better outcomes for symptoms, such as ventricular dysfunction or dilation, pulmonary hypertension and atrial fibrillation. In addition, mitral valve repair provides better long-term patient survival, better preservation of heart function, lower risk of complications, and usually eliminates the need for long-term use of blood thinners (anticoagulants).\*

**48** Total transcatheter mitral valve repair (since beginning of program in FY18)

\* Nishimura RA, Otto CM, Benow RO, et al. 2014 AHA/ACC guidelines for management of patient with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. Circulation. 2014

**Cardiothoracic Surgery Program**

The medical staff of Baylor Scott & White Heart and Vascular Hospital – Fort Worth work closely with the cardiothoracic surgeons and the clinical teams of Baylor Scott & White – Fort Worth in the care, treatment and recovery of patients needing cardiac surgery. Through collaborative efforts between the two hospital entities for streamlining processes and closely monitoring quality outcomes and patient experience indicators, the Fort Worth cardiovascular program will continue to lead Tarrant County and counties to the west in innovation, research and advancement of complex cardiovascular care. The Cardiothoracic Surgery Program at Baylor Scott & White All Saints Medical Center – Fort Worth continued to experience growth in fiscal year 2021. The program has shown wide acceptance by the residents of Tarrant and surrounding counties, contributing to year-over-year volume increases especially during 2016 through 2021. The team of cardiothoracic specialists continues to expand, as does the multidisciplinary team supporting the program.

In fiscal year 2021, the robotic cardiothoracic surgery program realized wider acceptance demonstrated by growing volumes. A larger percentage of valve surgeries were performed using minimally invasive techniques.

In fiscal year 2021, the Cardiovascular Intensive Care Unit and the Progressive Care Unit received the Silver Beacon Award from the American Association of Critical Care Nurses for nursing excellence based on quality metrics, leadership structures and systems, evidence-based practices, appropriate staffing, staff engagement and knowledge management. The team also recognizes the vital role of families to ensure holistic approach to cardiovascular care and provide for the well-being of all patients.

**282** Total cardiac surgeries – Fort Worth (FY21)

**116** Total cardiothoracic surgeries – Fort Worth (FY21)

**U.S. News & World Report Best Hospitals**

*Baylor Scott & White Heart and Vascular Hospital – Fort Worth is proud of the close collaboration on the Fort Worth campus with Baylor Scott & White – Fort Worth. The hospital, a part of Baylor Scott & White Health, is commended for recognition through U.S. News & World Report in July 2021.*

*In the category of “Best Hospital,” Baylor Scott & White – Fort Worth is ranked #22 in Texas and #7 in the Dallas-Fort Worth metropolitan area.*

*U.S. News & World Report also recognized Baylor Scott & White – Fort Worth as “High Performing” in Heart Failure and Heart Attack.*



**ECMO Program**

Complex cardiac patients from across the region continued to receive care at Baylor Scott & White All Saints Medical Center – Fort Worth thanks to the hospital’s successful extracorporeal membrane oxygenation (ECMO) life support program. Managed by credentialed and board-certified cardiovascular surgeons on the hospital’s medical staff and supported by a high-performing team comprised of a perfusionist, ECMO specialists, specially-trained operating room personnel, critical care nurses and respiratory therapists, the ECMO program received the ELSO Award Silver level certification for Excellence in Life Support in June 2021.

The program features advanced technology, high standards of care and innovative techniques to treat patients. The ECMO team’s commitment to excellence and improving patient care outcomes by integrating best practices and benchmarking processes, including the critical role families play in the patient’s care, drove the performance of the entire program at Baylor Scott & White – Fort Worth

**41** Total ECMO – Fort Worth (FY21)

Venovenous:	Venoarterial:	ECPR:
<b>30</b>	<b>10</b>	<b>1</b>

Information provided by Baylor Scott & White Heart and Vascular Hospital – Fort Worth Cardiothoracic Surgery Program

**Advanced Heart Failure**

In fiscal year 2021, Baylor Scott & White – Fort Worth was certified by the Centers for Medicare and Medicaid Services (CMS) to perform Left Ventricular Assist Device (LVAD) transplants. The program is an important new addition to the hospital’s Advanced Heart & Lung Disease Center and represents a leap forward in heart failure treatment for the residents of Tarrant and surrounding counties.

The certification allows Baylor Scott & White – Fort Worth to deliver advanced cardiovascular care to the heart failure patient population. More importantly, it offers patients an additional medical option for an improved quality of life while living with heart failure.

Through the Advanced Heart & Lung Disease Center, a core team supports the guidelines, framework and logistics of the LVAD program. This team is led by a heart failure specialist and assisted by a VAD coordinator, program director, social worker, and additional clinicians. Baylor Scott & White – Fort Worth joins only a handful of North Texas health facilities that offer LVAD.

The Advanced Heart & Lung Disease Center treated an expanding patient base in fiscal year 2021 by looking at the cause of heart failure in each patient and tailoring a treatment plan to address the patient’s precise needs. The center treated a wide variety of heart failure issues including complex congenital heart disease, inoperable coronary artery disease, dilated cardiomyopathy, hypertrophic or restrictive cardiomyopathy, infiltrative cardiomyopathy, ischemic cardiomyopathy, inoperable valvular heart disease, and refractory life-threatening conditions. The Center’s team used a comprehensive array of innovative treatment options including medications, controlling risk factors, implantable cardioverter defibrillators, cardiac resynchronization therapy, intravenous inotrope therapy, and ventricular assist devices. Patients meeting criteria for heart transplant are cared for through a collaborative effort between the Fort Worth and Dallas campuses.

The Advanced Heart & Lung Disease Center provided a variety of services, including a shared care model for VAD patients living in Fort Worth, medical management of progressive systems, medication optimization, mechanical circulatory support devices and evaluation, genetic testing for a variety of hereditary syndromes and symptoms, and access to clinical trials.

**For more information about this center: 817.922.2273.**





## Carter Cardiac and Pulmonary Rehabilitation Center



Cardiac rehab sessions (FY21):

>5,290

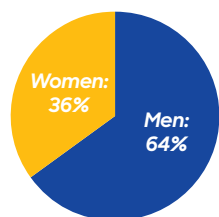
Cardiac rehab patients (FY21):

286

Average age - cardiac rehab (FY21):

64

Cardiac rehab patients by gender:



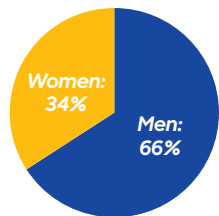
Pulmonary rehab patients (FY21):

63

Average age - pulmonary rehab (FY21):

66

Pulmonary rehab patients by gender:



Residents of Tarrant and surrounding counties needing cardiac and pulmonary rehabilitation turn to the experts at the Carter Cardiac and Pulmonary Rehabilitation Center, located in the Carter Fitness Center on the campus of Baylor Scott & White – Fort Worth, for individual care planning and therapy.

As an extension of Baylor Scott & White Heart and Vascular Hospital – Fort Worth, the Carter Cardiac and Pulmonary Rehabilitation Center features, a multidisciplinary team of health professionals – physicians, exercise physiologists, respiratory therapists, nurses, and registered dietitians who assess each patient’s health status and creates a care plan designed to return the patient to his or her highest level of functioning possible. The care plan incorporates the patient’s ability and activity level plus any specific strengthening activity in which the patient has a special interest, such as boxing or martial arts.

Many patients return to work after their cardiac or pulmonary episode. If their job requires physical work, exercise physiologists integrate their simulated work activities into their overall rehabilitation plan of care. By tailoring care to the individual patient’s needs, many are able to return to work earlier than if he or she had not participated in rehab. In addition, many rehabilitation patients are able to resume a more active lifestyle.

Once a patient completes the course of rehabilitation sessions, the team celebrates the “graduation” with the patient. In fiscal year 2021, the program’s medical director, Steve Simpson, MD, provided oversight and leadership to the team of more than 12 exercise physiologists, registered nurses and respiratory therapists.

### Keep Your Move In The Tube®

Thanks to the pioneering work of its sister rehab program – Baylor Scott & White Heart and Vascular Hospital – Dallas’ Walter I. Berman Cardiovascular Prevention and Cardiac Rehabilitation Center, the Carter Cardiac and Pulmonary Rehabilitation Center introduced Keep Your Move In The Tube® for sternotomy patients. The innovative approach to rehab for these patients who have their sternum opened during heart surgery applies standard kinesiology principles that teach patients how to perform load-bearing movements in a way that avoids excessive stress to the sternum. The approach is based on ergonomics that shorten the length of the outstretched arm, enabling patients to perform previously contraindicated movements. Patients are allowed to resume their normal load-bearing activities at their own pace, within pain-free limits, as long as they stay “in the tube.” The program enables sternotomy patients to regain their strength faster, often eliminating the costly and time-consuming step of going to skilled nursing, as well as often providing patients with the opportunity to immediately begin cardiac rehabilitation.

### Ongoing lifestyle education through Leap for Life®

Committed to the philosophy that cardiac and pulmonary rehab patients must be lifelong learners, Carter Cardiac and Pulmonary Rehabilitation sponsors a rich roster of educational opportunities. Through the Leap for Life® education and awareness program, webinar sessions were held twice a month during fiscal year 2021. In order to keep attendees safe but continue the valuable patient education during the time of the COVID-19 pandemic, the classes were held virtually. Patients are encouraged to register and attend the sessions, which are also open to the public. Topics vary each month. However, all are focused on wellness, disease prevention and risk factor reduction.



For more information about Leap for Life: [BSWHealth.com/DFWHeartLeapforLife](https://www.bswhealth.com/DFWHeartLeapforLife).

American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) certification



Carter Cardiac and Pulmonary Rehabilitation Center was re-certified by the AACVPR in 2021. The three-year certification recognizes the Center for its commitment to improving the quality of life of cardiac and pulmonary patients by enhancing standards of care. AACVPR Program Certification is the only peer-review accreditation process designed to review individual programs for adherence to standards and guidelines developed and published by AACVPR and other professional societies. AACVPR-certified programs are recognized as leaders in the field of cardiovascular and pulmonary rehabilitation because they offer the most advanced practices available. Many of the clinical team are involved in the national conference for AACVPR and have been speakers or presented posters.



### Supervised exercise therapy for patients with peripheral artery disease

In fiscal year 2021, Carter Cardiac and Pulmonary Rehabilitation launched a new supervised exercise therapy (SET) program for patients with peripheral artery disease (PAD). Developed in accordance with evidence-based protocols from the Vascular Disease Foundation and the American Association of Cardiovascular and Pulmonary Rehabilitation, the program continued focusing on increasing awareness for the program as a new therapy option.

Patients participating in the program are encouraged to complete three exercise sessions per week supervised by an interdisciplinary team of nurses, exercise physiologists and dietitians. The goal for each patient is to reach a pain tolerance level that can be improved upon at each session in order to build strength and exercise tolerance. The program typically spans eight to 12 weeks. Exercise training has the potential to interrupt functional decline, whether leg symptoms are present or not. The lack of activity in PAD patients can cause worsening cardiovascular risk factors, loss of leg strength and eventual disability. Clinical studies show SET for PAD can help improve functional capacity, decrease painful symptoms and achieve systemic risk-reduction benefits.

To speak to a clinician with the Carter Cardiac and Pulmonary Rehabilitation program: 817.922.1702.

>\$5.2 Million *Cardiovascular research grants - Dallas and Fort Worth sites (FY21)*

Fiscal year 2021 ended with a well-rounded and impressive list of clinical trials and studies despite the challenges that the pandemic provided. Cardiovascular clinical investigators affiliated with Soltero Cardiovascular Research Center in Dallas, a part of the Baylor Scott & White Research Institute, and through Baylor Scott & White Heart and Vascular Institute, participated in more than 65 clinical trials and research studies on the Dallas campus in fiscal year 2021. Also during fiscal year 2021, the Fort Worth campus grew the number of clinical trials, expanding opportunities for residents of Tarrant and the surrounding counties to participate in groundbreaking studies aimed at benefitting future cardiovascular patients.

*For a complete listing of the clinical trials and the principal investigators: [BSWHealth.com/research/clinical-trials](https://www.bswhealth.com/research/clinical-trials)*

Cardiologists on the medical staff were also involved in targeted studies related to COVID-19. Using their experience with specific medications, several heart specialists participated in national clinical trials and studies focused on identifying ways to slow or lessen the severity of COVID-19 illness in patients. This work took on added importance as researchers and physicians began to recognize the damage and long-term effects the virus was causing to the heart and vascular systems.

#### At the heart of clinical studies evaluating treatment options targeting COVID-19



**Robert L. Gottlieb, MD, PhD, FACC**, heart failure specialist on the medical staff of Baylor Scott & White Heart and Vascular Hospital - Dallas, was the co-principal investigator for the Baylor Scott & White Research Institute's Dallas site for **SIMPLE** trials to study the antiviral drug remdesivir, collaborating with Gilead Sciences. This drug was proven a treatment option for patients severely ill with COVID-19. The Dallas site was one of 180 hospitals worldwide participating in 2019 and 2020 during the height of the pandemic. Study results indicated that it helped shorten the illness time and the severity of the virus, decreasing morbidity by 62%. Dr. Gottlieb served as chair for the international Trial Guidance and Publication Committee.

In addition, Baylor Dallas was the leading enroller worldwide in the study in participants with early-stage COVID-19 to evaluate the safety, efficacy and pharmacokinetics of remdesivir administered by inhalation. The study characterized the impact of inhaled remdesivir (RDV) on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) viral load in participants with early-stage coronavirus disease 2019 (COVID-19).

Other key COVID-19 treatment studies in which Dr. Gottlieb served as principal investigator or co-principal investigator in FY21 include:

- A study to evaluate the **EFFICACY AND SAFETY OF SIRUKUMAB IN CONFIRMED SEVERE OR CRITICAL CONFIRMED CORONAVIRUS DISEASE (COVID)-19** - The purpose of this study was to evaluate the clinical response of Sirukumab (administered as a single intravenous dose) plus standard of care (SOC) compared to placebo plus SOC in COVID-19. Baylor Dallas was a leading enroller nationwide for this study.
- **BLAZE-1 - A STUDY OF LY3819253 (LY-COV555) AND LY3832479 (LY-COV016) IN PARTICIPANTS WITH MILD TO MODERATE COVID-19 ILLNESS** - The purpose of this study was to measure how well LY3819253 and LY3832479 work against the virus that causes COVID-19. LY3819253 and LY3832479 will be given to participants with early symptoms of COVID-19.
- **BLAZE-4 - A STUDY OF IMMUNE SYSTEM PROTEINS IN PARTICIPANTS WITH MILD TO MODERATE COVID-19 ILLNESS** - The purpose of this study was to measure how well monoclonal antibodies work, either alone or in combination, against the virus that causes COVID-19.
- **ACTIV-3 - Therapeutics for Inpatients with COVID-19 (TICO)** - This study assessed the safety and effectiveness of different drugs in treating COVID-19 in people who have been hospitalized with the infection. Participants in the study will be treated with either a study drug plus current standard of care (SOC), or with placebo plus current SOC. Co-principal investigator was Uriel Sebastian Sandkovsky, MD.

- **BREATHE - A STUDY TO ASSESS THE EFFICACY AND SAFETY OF GIMSILUMAB IN SUBJECTS WITH LUNG INJURY OR ACUTE RESPIRATORY DISTRESS SYNDROME SECONDARY TO COVID-19** - Gimsilumab is a monoclonal antibody against granulocyte macrophage-colony stimulating factor (GM-CSF), which is a myeloid cell growth factor and pro-inflammatory cytokine. Late stages of COVID-19 can be marked by a "cytokine storm" and the over activation of inflammatory myeloid cells that infiltrate and damage tissue, such as the lungs. Inhibition of GM-CSF may be able to reverse this pathology. This multi-center, adaptive, randomized, double-blind, placebo-controlled study assessed the efficacy and safety of gimsilumab in subjects with lung injury or acute respiratory distress syndrome (ARDS) secondary to COVID-19. Baylor Dallas was a leading enroller nationwide for this study.
- **Effect of Bamlanivimab as Monotherapy or in Combination With Etesevimab on Viral Load in Patients With Mild to Moderate COVID-19: A Randomized Clinical Trial.** Authors: Gottlieb RL, Nirula A, Chen P, et al. JAMA. 2021;325(7):632-644. doi:10.1001/jama.2021.0202.
- **Bamlanivimab plus Etesevimab in Mild or Moderate Covid-19.** Authors: Dougan M, Nirula A, Azizad M, Mocherla, B, Gottlieb RL, et al. N Engl J Med; DOI: 10.1056/NEJMoa2102685.

#### Research and Clinical Trials

##### Nationally Recognized Top Enrolling Studies

- BREATHE** - Ranked #1 nationwide
- SPYRAL ON, SPYRAL OFF** - Ranked #1 nationwide
- SPYRAL DYSTAL** - Ranked #1 nationwide
- SHORE** - Ranked #1 nationwide
- EFFICACY AND SAFETY OF SIRUKUMAB FOR COVID-19** - Ranked #1 nationwide
- EVAHEART** - Tied for #1 nationwide
- ALL-IN** - Ranked #2 nationwide
- AGENT™** - Ranked #5 nationwide
- NEUROS** - Ranked #4 nationwide
- MOTR** - Ranked #5 nationwide

#### Dallas Site Clinical Trials

**4D-310-C001** - An open-label, phase 1 and 2 trial of gene therapy 4D-310 in adult males with classic Fabry Disease. Principal investigator: Peter McCullough, MD.

**020-079 NIS** - A study looking at the national trends in hospital utilization, mortality and cost of care for patients with versus without hyperkalemia. Principal investigator: Kristen Tecson, PhD.

**ABBOTT SKYPOINT 48** - A study to evaluate the safety and effectiveness of the ABT NG DES 48 in improving coronary artery luminal diameter in subjects with coronary artery disease (CAD) due to de novo native coronary artery long lesions. Principal investigator: James Choi, MD.

**ABSORB III/IV** - A clinical evaluation of Absorb™ BVS, the Everolimus eluting bioresorbable vascular scaffold in the treatment of subjects with de novo native coronary artery lesions. Principal investigator: James Choi, MD.

**ACURATE** - This trial compares the ACURATE transfemoral aortic valve system with other commercially available valves that can be delivered without open heart surgery. Principal investigator: Robert Stoler, MD.

**ADAPTABLE** - A patient-centric trial assessing the benefits and long-term effectiveness of aspirin dosing. Principal investigator: Peter McCullough, MD.

**AGENT™** - The purpose of the trial is to assess the safety and effectiveness of the Agent™ Paclitaxel Coated PTCA Balloon Catheter compared to balloon angioplasty (POBA) in patients with in-stent restenosis (ISR) of a previously treated lesion of up to 26 mm in length (by visual estimate) in a native coronary artery 2.0 mm to 4.0 mm in diameter. Principal investigator: Robert Stoler, MD.

**ALL-IN** - A study to evaluate if Tocilizumab will, when given with standard anti-rejection medicines, lead to better heart transplantation outcomes at one year after the transplant, with less rejection, less development of unwanted antibodies, and better heart function. Principal investigator: Shelley Hall, MD.



**ALLO MAP PATIENT EXPERIENCE STUDY** - A single-center survey study to compare the post-heart transplant patient's experience of having two different modalities of testing completed: endomyocardial biopsy (EMB) and Allomap® testing. This is to check for graft rejection parameters and to assess the differences in terms of patient satisfaction via the Generalized Anxiety Disorder 7 item scale (GAD-7) validated instrument, pain experience via the Polyclinic pain scale instrument, and questions about any adverse events. Principal investigator: Aayla Jamil, MPH.

**ALLOSURE EXERCISE** - This study uses AlloSure test characteristics in immunologically quiescent and immunologically active heart transplant recipients. Assessing maximal cardiopulmonary stress testing prior to assay and the preservation of test specificity while enhancing sensitivity. Principal investigator: Robert Gottlieb, MD, PhD.

**APOLLO** - A multi-center, global, prospective, randomized, interventional pre-market study to evaluate whether TMVR is non-inferior to conventional mitral valve surgery at one year for patients with severe symptomatic native mitral regurgitation. Study subjects are randomized on a 1:1 basis to either TMVR with the Medtronic Intrepid™ TMVR System or to conventional mitral valve surgery to compare treatment efficacy. Principal investigator: Ravi Vallabhan, MD.

**APOLLO-B** - Randomized, double-blind, placebo-controlled multi-center study to evaluate the efficacy and safety of patisiran in patients with transthyretin amyloidosis with cardiomyopathy (ATTR Amyloidosis with cardiomyopathy). Principal investigator: Parag Kale, MD.

**ARRAY-797-301** - A phase 3, multi-national, randomized, placebo-controlled study of ARRY-371797 in patients with symptomatic dilated cardiomyopathy due to a Lamin A/C gene mutation. The study also evaluates the effect of ARRY-371797 on functional capacity (as measured by the 6-minute walk test [6MWT]) compared to placebo in NYHA Class II-IV patients. Principal investigator: Robert Gottlieb, MD, PhD.

**ARIES HM3** - Prospective, randomized, double-blinded, placebo-controlled clinical investigation of advanced heart failure patients treated with the HM3 with two different antithrombotic regimens: vitamin K antagonist with aspirin versus vitamin K antagonist with placebo. Principal investigator: Shelley Hall, MD.

**ASAP-TOO** - Assessment of the WATCHMAN™ device in patients unsuitable for oral anticoagulation. The purpose of this study is to establish the safety and effectiveness of the left atrial appendage closure device for subjects with non-valvular atrial fibrillation who are not suitable for oral anticoagulation therapy. Principal investigator: James Choi, MD.

**BARIATRIC SURGERY ON CARDIOVASCULAR FUNCTION** - The purpose of this study is to collect data from patients with advanced heart failure undergoing bariatric surgery to investigate the short-term and long-term outcomes of weight loss surgery on patients with heart failure. Principal investigator: Daniel Davis, DO.

**BIOFLOW V** - A prospective randomized multi-center study to assess the safety and effectiveness of the Orsiro Sirolimus Eluting Coronary Stent System in the treatment of subjects with up to three de novo or restenotic coronary artery lesions - V. Principal investigator: James Choi, MD.

**BIOFLOW VII** - The purpose of this post-approval study is to confirm that the clinical performance of the Orsiro® stent in a real-world setting is similar to the clinical performance observed for Orsiro in the BIOFLOW-V Investigational Device Exemption pivotal trial. Principal investigator: Robert Stoler, MD.

**BIS** - Bioelectrical Impedance Spectroscopy in Heart Transplantation. This study tracks post-transplant changes in body composition and correlation with conventional preoperative risk assessment modalities. Principal investigator: Jeannette Hasse, PhD.

**BREATHE** - A study to assess the efficacy and safety of Gimsilumab in subjects with lung injury or acute respiratory distress syndrome secondary to COVID-19. Gimsilumab is a monoclonal antibody against granulocyte macrophage-colony stimulating factor (GM-CSF), which is a myeloid cell growth factor and pro-inflammatory cytokine. Late stages of COVID-19 can be marked by a "cytokine storm" and the overactivation of inflammatory myeloid cells that infiltrate and damage tissue, such as the lungs. Inhibition of GM-CSF may be able to reverse this pathology. This multi-center, adaptive, randomized, double-blind, placebo-controlled study assessed the efficacy and safety of gimsilumab in subjects with lung injury or acute respiratory distress syndrome (ARDS) secondary to COVID-19. Baylor Dallas was a leading enroller nationwide for this study. Principal investigator: Robert Gottlieb, MD, PhD.

**CARDIOMEMS** - This study evaluates the impact of using CardioMEMS for heart failure (HF) patients in a large healthcare system: a registry. Principal investigator: Shelley Hall, MD.

**CARMAT TOTAL ARTIFICIAL HEART** - Evaluate the safety and performance of the Carmat Total Artificial Heart in subjects with advanced heart failure requiring biventricular support. Baylor University Medical Center is one of seven sites participating in this bridge-to-transplant study for advanced heart failure patients. Principal investigator: Dan Meyer, MD.

**COAPT** - The purpose of the Cardiovascular Outcomes Assessment of the MitraClip® Percutaneous Therapy for Heart Failure Patients with Functional Mitral Regurgitation (COAPT) trial is to confirm the safety and effectiveness of the MitraClip System for the treatment of moderate-to-severe or severe functional mitral regurgitation (FMR) in symptomatic heart failure subjects who are treated per standard of care and who have been determined by the site's local heart team as not appropriate for mitral valve surgery. Principal investigator: Robert F. Hebel, Jr., MD.

**COAPT/CAS** - The objective of this study is to evaluate the MitraClip® NT System for the treatment of clinically significant functional mitral regurgitation (FMR) in symptomatic heart failure subjects who are treated per standard of care and who have been determined by the site's local heart team as not appropriate for mitral valve surgery. Principal investigator: Robert F. Hebel, Jr., MD.

**CTO** - A multi-center register of chronic total occlusion interventions. Principal Investigator: James Choi, MD.

**DAPA ACT HF** - A multi-center, randomized, double-blind, parallel group, placebo-controlled trial to evaluate the effect of in-hospital initiation of dapagliflozin on clinical outcomes in patients with heart failure with reduced ejection fraction who have been stabilized during hospitalization for acute heart failure. Principal investigator: Amarinder Bindra, MD.

**DIAMOND** - A multi-center, double-blind, placebo-controlled, randomized withdrawal, parallel group study of Patiromer for the management of hyperkalemia in subjects receiving Renin-Angiotensin-Aldosterone System Inhibitor (RAASi) medications for the treatment of heart failure. Principal investigator: Amarinder Bindra, MD.

**EARLY TAVR** - A prospective, controlled, multi-center study. Patients will be randomized 1:1 to receive either transcatheter aortic valve replacement (TAVR) with the Edwards SAPIEN 3 THV or clinical surveillance (CS). Patients are stratified by whether or not they are able to perform a treadmill stress test; in addition, patients who are screened for enrollment but have a positive stress test will be followed in a registry to collect data on subsequent treatment and mortality, as applicable. Principal investigator: Robert Stoler, MD.

**EBR WISE** - This study is a prospective, multi-center, pivotal trial to study the safety and efficacy of the WiSE-CRT System for cardiac re-synchronization therapy. The WiSE-CRT System is an implantable cardiac pacing system capable of delivering pacing energy to the left ventricle of the heart without using a pacing lead. Co-principal investigators: Manish Assar, MD; Robert L. Gottlieb, MD, PhD.

**EMPULSE** - A multi-center, randomized, double-blind, 90-day superiority trial to evaluate the effect on clinical benefit, safety and tolerability of once daily oral EMPagliflozin 10 mg compared to placebo, initiated in patients hospitalized for acute heart failure (de novo or decompensated chronic HF) who have been stabilized. Principal investigator: Cesar Guerrero-Miranda, MD.

**EVAHEART** - This is a prospective, multi-center, unblinded, randomized, controlled, and non-inferiority study comparing the EVA2 LVAS to the most recent magnetically levitated centrifugal LVAS (HM3 LVAS). Principal investigator: Dan M. Meyer, MD.

**EVINACUMAB** - The primary objective of the study is to demonstrate the reduction of low-density lipoprotein cholesterol (LDL-C) by evinacumab intravenously (IV) in comparison to placebo after 24 weeks in patients with homozygous familial hypercholesterolemia (HoFH). Principal investigator: Robert Gottlieb, MD, PhD.

**EVOLUT R/XL** - This study evaluates the efficacy and safety of the Evolut R and XL aortic valve replacement. Principal investigator: Robert Stoler, MD.

**EVOLVE 4.5/5.0** - A US post-approval study to prove the safety and effectiveness of the Synergy 4.50/5.0 mm Everolimus-Eluting Platinum Chromium Coronary Stent System for treatment of atherosclerotic lesions. Principal investigator: Robert Stoler, MD.

**EVOLVE 48** - A prospective multi-center single arm trial to assess the safety and effectiveness of the SYNERGYTM 48 mm Everolimus-Eluting Platinum Chromium Coronary Stent System (SYNERGYTM Stent System) for the treatment of subjects with atherosclerotic lesion(s). Principal investigator: Robert Stoler, MD.

**EXCEED** - A prospective, single-arm, controlled, multi-center study to establish the safety and effectiveness of the CENTERA THV system in intermediate risk patients who have symptomatic, severe, calcific, aortic stenosis requiring aortic valve replacement. Principal investigator: Robert Stoler, MD.

**EXTEND-CRS** - In fiscal year 2021, this study was in manuscript stage. The study was a prospective, double-blind placebo controlled, parallel group, randomized trial of extended release exenatide versus placebo (Cohort A) and a prospective single group, open label, blinded outcome trial of extended release exenatide (Cohort B) in Type 2 diabetic patients with Type 4 cardiorenal syndrome (Extend CRS Trial). The study was to find what effects exenatide extended-release for injectable suspension, a current FDA approved treatment for Type 2 diabetes mellitus as on heart and kidney function. Principal investigator: Peter McCullough, MD.

**FLOW** - A multi-center, international, randomized, double-blind, parallel group, placebo-controlled trial comparing semaglutide 1.0 mg versus placebo both administered subcutaneous once weekly and added to standard of care in subjects with type 2 diabetes and pre-existing chronic kidney disease. Principal investigator: Peter McCullough, MD.

**FROZEN AF** - A study to evaluate the safety & effectiveness of Boston Scientific cryoablation system for treatment of symptomatic, drug refractory, recurrent paroxysmal afib. Principal investigator: Kevin Wheelan, MD.

**GALACTIC-HF** - This study determines if treatment with omecamtiv mecarbil/AMG 423 when added to standard of care is well tolerated and superior to placebo in reducing the risk of cardiovascular death or heart failure events in subjects with chronic HFrEF. Principal investigator: Susan Joseph, MD.

**GREAT REGISTRY** - A prospective, observational registry to obtain data on GREAT device performance and clinical outcomes for endovascular aortic treatment. Principal investigator: Dennis R. Gable, MD.

**GUIDE-HF** - Hemodynamic-Guided Management of Heart Failure study evaluates heart failure patients with recent heart failure hospitalizations and NYHA II or III or IV and the effectiveness of the CardioMEMS HF System device. Principal investigator for Dallas site: Shelley Hall, MD.

**GUARDIAN Registry** - Global Utilization and Registry Database for Improved Heart Preservation. Principal investigator: Dan Meyer, MD.

**HEART-FID** - Randomized placebo-controlled trial of FCM as treatment for heart failure with iron deficiency. The primary objective of this study is to determine the efficacy and safety of iron therapy using intravenous (IV) ferric carboxymaltose (FCM), relative to placebo, in the treatment of participants in heart failure with iron deficiency and with a reduced ejection fraction. Principal investigator: Shelley Hall, MD.

**HEARTMATE3 PAS** - A prospective, multi-center, non-blinded, controlled study intended to evaluate the extended use of the HM3 LVAS compared to the HMII LVAS in those patients that are ongoing at the two-year follow-up in the MOMENTUM 3 IDE trial. Principal investigator: Shelley Hall, MD.

**HEARTWARE ENDURANCE** - A prospective, randomized, controlled, unblinded, multi-center clinical trial to evaluate the HeartWare™ Ventricular Assist Device System for destination therapy of advanced heart failure. Principal investigator: Dan M. Meyer, MD.

**HELIOS-A** - A phase 3 global, controlled, open-label study to evaluate the efficacy and safety of ALN-TTRSC02 in patients with hereditary transthyretin amyloidosis (hATTR Amyloidosis). Principal investigator: Parag Kale, MD.

**HEPC TRANSPLANT COLLABORATIVE** - Principal investigator: Shelley Hall, MD.

**HLA ANTIBODIES IN BTT** - This is a prospective analysis of de novo antihuman leukocyte antigen antibodies production in patients bridged by temporary mechanical circulatory support devices to orthotopic heart transplantation. Principal investigator: Shelley Hall, MD.

**HUMANITY** - An assessment of Humacyte's Human Acellular Vessel in patients needing Renal replacement therapy: a comparison with ePTFE grafts as conduits for hemodialysis (HUMANITY). Principal investigator: Stephen Hohmann, MD.

**INNAVASC** - This study evaluates the safety and effectiveness of the InnAVasc AVG for hemodialysis access in patients with ESRD. The safety and the effectiveness of the device and the procedure will be assessed using separate primary endpoints through six months. Principal investigator: Stephen Hohmann, MD.

**INTERHEART EX** - This study evaluates the extension of the diagnostic and therapeutic applications of microarrays in heart transplantation, a multicenter study (INTERHEARTEX). Principal investigator: Shelley Hall, MD.

**INTERMACS** - The Intermacs registry is a national quality improvement system designed to advance the understanding and application of mechanical circulatory support in order to improve the duration and quality of life in patients with advanced heart failure. Principal investigator: Dan M. Meyer, MD.

**INTREPID** - A study to evaluate the safety and performance of the Twelve Intrepid Transcatheter Mitral Valve Replacement System in high-risk patients with severe, symptomatic mitral regurgitation. Principal investigator: Paul Grayburn, MD.

**IONIS NEURO-TRANSFORM** - A phase 3 global, open-label, randomized study to evaluate the efficacy and safety of ION-682884 in patients with hereditary transthyretin-mediated amyloid polyneuropathy. Principal investigator: Parag Kale, MD.

**LONGTERM LMCA** - A study that evaluates the long term safety and efficacy of percutaneous coronary artery intervention for unprotected left main coronary artery disease: the BHVH experience. Principal investigator: James Choi, MD.

**LOW-RISK BICUSPID VALVE TRIAL** - TAVR with Medtronic Surgical Aortic Valve Replacement (SAVR). The study's objective is to evaluate the procedural safety and efficacy of the Medtronic TAVR system in patients with bicuspid aortic anatomy and severe aortic stenosis at low risk for SAVR. Principal investigator: Robert Stoler, MD.

**LOWER** - The Lomitapide observational worldwide evaluation registry. Principal investigator: Peter McCullough, MD.

**LSDR** - The Rare Disease Registry program (including Gaucher, Fabry, MPS I, and Pompe diseases) is a multi-center, international, longitudinal, observational, and voluntary program that tracks the natural history and treatment outcomes of patients with these rare diseases, both treated and not treated. Principal investigator: Peter McCullough, MD.

**LVAD REFERRAL BIAS** - A single-center retrospective analysis to distinguish referral bias versus management difference in access to advanced cardiothoracic heart failure therapies. Principal investigator: Robert Gottlieb, MD, PhD.

**MAFASA** - This is a prospective, single arm, non-randomized, multi-center observational study to demonstrate the performance of the EchoMark and EchoSure devices in patients undergoing peripheral arteriovenous fistula creation for hemodialysis access. Principal investigator: Stephen Hohmann, MD.

**MEDTRONIC DT PAS** - The HeartWare™ HVAD™ destination therapy (DT) post approval study (PAS) to further confirm safety and effectiveness of the HeartWare Ventricular Assist Device System (HVAD System) when used as intended, in "real-world" clinical practice. Principal investigator: Dan M. Meyer, MD.

**MEDTRONIC TAVR IN LOW RISK PATIENTS/LOW RISK CAS** - A study evaluating transcatheter aortic valve replacement (TAVR) in patients with the Medtronic Transcatheter Aortic Valve Replacement System (TAVR) in patients at low risk for surgical aortic valve replacement (SAVR). Principal investigator: Robert Stoler, MD.

**METEORIC** - A double-blind, randomized, placebo-controlled, multi-center study to assess the effect of Omecamtiv Mecarbil on exercise capacity in subjects with heart failure with reduced ejection fraction and decreased exercise tolerance. Principal investigator: Amarinder Bindra, MD.

**MOMENTUM 3 CAP** - The purpose of this study is to evaluate the safety and effectiveness of the HeartMate III LVAS by demonstrating non-inferiority to the HeartMate II LVAS when used for the treatment of advanced, refractory, left ventricular heart failure. Principal investigator: Shelley Hall, MD.

**MOTR** - The purpose of this study is to assess the use of donor-derived cell-free DNA in multi-organ transplant rejection detection. Principal investigator: Timothy Gong, MD.



**NEUROS** - This study evaluates the high-frequency nerve block for post-amputation pain. Principal investigator: John Eidt, MD.

**NODE 303** - This study evaluates the safety of self-administered Etripamil nasal spray for PSVT. Principal investigator: Praveen Rao, MD.

**NOVARTIS CTQ123A12001** - A multi-center cross-sectional epidemiological study to characterize the prevalence and distribution of lipoprotein (A) levels among patients with established cardiovascular disease. Principal investigator: Peter McCullough, MD.

**NUPULSE CV IVAS** - This is a clinical feasibility study to evaluate ambulatory counterpulsation for the treatment of advanced heart failure. Principal investigator: Dan M. Meyer, MD.

**ONYX ONE CLEAR** - This study is designed to evaluate the clinical safety of the Resolute Onyx stent with use of one-month DAPT in subjects deemed at high risk for bleeding and/or medically unsuitable for more than one-month DAPT treatment. Principal investigator: James Choi, MD.

**PARAGLIDE HF** - A multi-center, randomized, double-blind, double-dummy, parallel group, active controlled eight-week study to evaluate the effect of sacubitril/valsartan (LCZ696) versus valsartan on changes in NT-proBNP and safety and tolerability of in-hospital initiation of LCZ696 compared to valsartan in HFpEF patients with acute decompensated heart failure (ADHF) who have been stabilized during hospitalization (PARAGLIDE-HF). Principal investigator: Shelley Hall, MD.

**PCR** - The Preventive Cardiology Registry. Principal investigator: Peter McCullough, MD.

**PGD NATIONAL REGISTRY** - Primary Graft Dysfunction International Consortium. Principal investigator: Shelley Hall, MD.

**PREDICTORS OF EARLY ELEVATION** - This study looks at the predictors of intermediate/high AlloSure scores outside of acute cellular rejection, antibody-mediated rejection and/or graft failure. Principal investigator: Sandra Carey, PhD.

**PRESERVED-HF TRIAL** - This study evaluates the effects of dapagliflozin on biomarkers, symptoms and functional status in patients with PRESERVED ejection fraction heart failure. Principal investigator: Susan Joseph, MD.

**PRE-WHIRE and Pre-WHIRE II** - In fiscal year 2021, this study came to a close and was in manuscript stage at the time of printing this book. The purpose of this prospective study was to assess hydroxychloroquine in the prevention of SARS-COV-2 (COVID-19) infection in healthcare workers after high-risk exposures. Principal investigator: Peter McCullough, MD.

**Preventive Cardiology Registry and Rare Disease Registry Program (LSDR).**  
Principal investigator: Peter McCullough, MD.

**PROTECTED TAVR** - This is a prospective, post-market, multi-center randomized controlled trial evaluating use of the Sentinel Cerebral Protection System in subjects with aortic valve stenosis who are treated with a commercially available TAVR device. Principal investigator: Robert Stoler, MD.

**QUARK309** - A randomized, double-blind, placebo controlled, phase 3 study to evaluate the efficacy and safety of QPI-1002 for the prevention of major adverse kidney events (MAKE) in subjects at high risk for acute kidney injury (AKI) following cardiac surgery: QUARK309 Study. Principal investigator: Robert F. Hebel, Jr., MD.

**QUEST** - Electrical Nerve Block for Amputation Pain: The purpose of this clinical trial is to learn whether electrical nerve block via the Altius System is a safe and effective treatment for patients with phantom limb pain and/or residual limb pain. Principal investigator: John F. Eidt, MD.

**QUEST TRIAL-NEUROS** - The primary study objective is to evaluate the safety and effectiveness of the Altius® System High Frequency Nerve Block (HFNB) treatment for the management of post amputation pain. The secondary study objective is to determine the impact of Altius HFNB treatment for post amputation pain on health outcomes, including measurement health related quality of life and use of pain medications. Principal investigator: John F. Eidt, MD.

**RAPAD** - The objective of this study is to determine if the novel use of a commercially-available radiation protection pad will significantly reduce the radiation exposure to the operating surgeon during fluoroscopic-imaging guided procedures. Principal investigator: Gregory Pearl, MD.

**REDUCE LAP-HF** - The study evaluates the Corvia Medical, Inc. IASD® System II to reduce elevated left atrial pressure in patients with heart failure. The Corvia Medical InterAtrial Shunt Device (IASD®) System II is indicated for the improvement in quality of life and reduction of heart failure related symptoms and events in patients with heart failure with preserved (HFpEF) or mid-range ejection fraction (HFmrEF) with elevated left atrial pressures, who remain symptomatic despite standard GDMT. Principal investigator: Cesar Guerrero-Miranda, MD.

**REPRISE III** - The objective of this study is to evaluate the safety and effectiveness of the Lotus™ Valve System and LOTUS Edge™ Valve System for transcatheter aortic valve replacement (TAVR) in symptomatic subjects with calcific, severe native aortic stenosis who are considered at extreme or high risk for surgical valve replacement. Principal investigator: Robert Stoler, MD.

**RNA SEQUENCING SARCOIDOSIS** - Comprehensive identification of molecular biomarkers for cardiac sarcoidosis from whole blood using next generation RNA sequencing. Principal investigator: Detlef Wencker, MD.

**SHEARWAVE** - This trial determines the association of liver stiffness with development of post-LVAD RHF and identifies cutpoint(s) of LS associated with increased mortality during hospital stay, at 30 days, and at one year. The trial also determines the association between LS and post-LVAD complications including the development of cardiorenal syndrome. Principal investigator: Amarinder Bindra, MD.

**SHOCK 1000** - SHOCK 1000 multi-center registry. Principal investigator: Detlef Wencker, MD.

**SHOCKWAVE** - A prospective, multi-center, single-arm, global IDE study of the Shockwave Coronary Intravascular Lithotripsy System with the Shockwave C2 Coronary IVL Catheter in calcified coronary arteries (Disrupt CAD III Study). Principal investigator: Robert Stoler, MD.

**SHORE** - This is an observational registry to assess the clinical utility of surveillance using HeartCare testing services, in association with clinical care of heart transplant recipients. Principal investigator: Shelley Hall, MD.

**SLEEP APNEA POST CARDIAC TRANSPLANT** - This study evaluates the impact of sleep apnea post cardiac transplantation. Principal investigator: Sandra Carey, PhD.

**SOPRANO** - This study evaluates the effect of macitentan 10 mg on pulmonary vascular resistance (PVR) as compared to placebo in subjects with pulmonary hypertension (PH) after left ventricular assist device implantation. The study also evaluates the effect of macitentan 10 mg as compared to placebo on cardio-pulmonary hemodynamics and disease severity in subjects with PH after LVAD implantation. Finally, the study explores the potential effect of macitentan 10 mg as compared to placebo on right ventricular function, selected clinical events, and on renal function as measured by glomerular filtration rate (GFR), in subjects with PH after LVAD implantation. Principal investigator: Shelley Hall, MD.

**SPIRRIT HFPEF** - A unique registry-randomized clinical trial (RRCT) that will test the hypothesis that Spironolactone plus standard of care compared to standard of care alone reduces the composite of CV mortality and HF hospitalization. Principal investigator: Timothy Gong, MD.

**STATSEAL ADVANCED** - The primary objectives of this study are to evaluate the performance of StatSeal Advanced used in conjunction with the TR Band (SS) as compared to the TR Band without SS (TRB) relative to: 1. the Time to Hemostasis (TTH); 2. the incidence of access site or forearm hematoma; 3. peri-procedural radial artery occlusion (RAO) at discharge or 24 hours, whichever occurs first. Principal investigator: Jeffrey Schussler, MD.

**SUMMIT** - Clinical trial to evaluate the safety and effectiveness of using the Tendyne Mitral Valve System for the treatment of symptomatic mitral regurgitation (SUMMIT). Principal investigator: Robert F. Hebel, Jr., MD.

**SURTAVI** - This study is designed to investigate the safety and efficacy of transcatheter aortic valve implantation in patients with severe, symptomatic aortic stenosis at intermediate surgical risk by randomizing patients to either surgical aortic valve replacement or transcatheter aortic valve replacement. Principal investigator: Robert Stoler, MD.

**TI AND RECURRENT EVENTS** - A study of the retrospective use of healthcare/pharmaceutical/insurance claims data on patients from the HMO Research Network database to determine therapeutic intensity of lipid lowering therapy in recurrent CV events. Principal investigator: Peter McCullough, MD.

**TOPCAT** - A study of the retrospective use of public-use data made available by NIH. Principal investigator: Peter McCullough, MD.

**TRANSFORM-HF** - A large-scale, pragmatic, randomized, unblinded clinical effectiveness study comparing torsemide versus furosemide as treatment for heart failure. Principal investigator: Melody Sherwood, MD.

**TRILUMINATE** - A randomized, controlled trial to demonstrate the safety and effectiveness of the TriClip device in improving clinical outcomes in symptomatic patients with severe tricuspid regurgitation (TR), who are at intermediate or greater estimated risk for mortality with tricuspid valve surgery. The study compares the TriClip device to control medical therapy. Principal investigator: James Choi, MD.

**TROJAN-C** - This phase II, multi-center, open-label study will evaluate the safety and efficacy of utilizing HCV-positive donors for heart transplant in HCV-negative recipients treated with sofosbuvir 400 mg / velpatasvir 100 mg (Epclusa®). Principal investigator: Robert Gottlieb, MD, PhD.

**VASCC PROJECT 2** - The study will look at various outcomes, including but not limited to in-hospital complications and adverse events related to the patterns of hematologic changes among COVID-19 patients. Also, we aim to identify various management practices among a diverse group of vascular surgeons around the world and correlate with patient outcomes. Principal investigator: John Eidt, MD.

**VELOXIS ENVARUSUS** - A phase II study evaluating the efficacy of tacrolimus extended release tablets to twice daily tacrolimus dosing regimen. Twenty-five adult recipients of a heart transplant will be enrolled in each group—one receiving a once a day dosing of Envarsus, the other receiving twice a day dosing of Prograf. Results of the two groups will be compared and evaluated for short-term safety and tolerability of Envarsus. Principal investigator: Shelley Hall, MD.

**XIENCE 28** - A prospective, single arm, multi-center, open label, non-randomized trial to evaluate the safety of one-month (as short as 28 days) DAPT in HBR subjects undergoing PCI with XIENCE. Principal investigator: James Choi, MD.

**XIENCE 90** - The objective of this trial is to evaluate safety of three-months dual antiplatelet therapy (DAPT) in subjects at high risk of bleeding (HBR) undergoing percutaneous coronary intervention (PCI) with XIENCE. Principal investigator: James Choi, MD.

#### Soltero Cardiovascular Research Center

The Soltero Cardiovascular Research Center (SCRC), a part of Baylor Scott & White Research Institute, began on the Baylor Dallas campus in 1987. SCRC's goal is to bring clinically relevant cardiology research studies to Baylor Scott & White Health to improve patients' lives by understanding, preventing and even reversing heart disease.



**Cara East, MD, FAPCR, FACP, FACC**, is director of SCRC. SCRC has MAGI Blue Ribbon Site designation and is nationally recognized for conducting high-quality studies addressing cardiovascular problems, medications and surgical procedures. Its studies

have focused on cardiovascular issues caused by diabetes, hardening of the arteries, high blood pressure, and increased levels of lipoprotein molecules in the blood.

#### SCRC Clinical trials included:

**ALIDIAL** - A phase III trial to evaluate the efficacy and safety of biweekly alirocumab in patients on a stable dialysis regimen. Principal investigator: Cara East, MD.

**CLEAR** - A randomized, double-blind, placebo-controlled study to assess the effects of bempedoic acid (ETC-1002) on the occurrence of major cardiovascular events in patients with, or at high risk for, cardiovascular disease who are statin intolerant. Principal investigator: Cara East, MD.

**CONNECT-AV** - A prospective, multi-center clinical study of the BD WavelinQ EndoAVF System for the creation of arteriovenous AV Fistula in patients requiring dialysis (CONNECT-AV). Principal investigator: Stephen Hohmann, MD.

**DELIVER** - A prospective, single-arm, multi-center study of the metavention integrated radio frequency denervation system to improve glycemic control in type 2 diabetic subjects. Principal investigator: James Choi, MD.

**DREAM** - A double-blind, randomized, sham-procedure-controlled, parallel-group efficacy and safety study of allogeneic mesenchymal precursor cells (rexlemestrol-L) in patients with chronic heart failure due to left ventricular systolic dysfunction of either ischemic or nonischemic etiology: DREAM HF-1. Principal investigator: Cara East, MD.

**EMPEROR-Preserved** - A phase III randomized, double-blind trial to evaluate efficacy and safety of once daily empagliflozin 10 mg compared to placebo, in patients with chronic Heart Failure with preserved Ejection Fraction (HFpEF). EMPagliflozin outcomE tRial in patients with chrOnic heaRt failure (EMPEROR-Preserved). Co-principal investigators: Cara East, MD; Peter McCullough, MD.

**EMPEROR-Reduced** - A phase III randomized, double-blind trial to evaluate efficacy and safety of once daily empagliflozin 10 mg compared to placebo, in patients with chronic Heart Failure with reduced Ejection Fraction (HFrEF). EMPagliflozin outcomE tRial in patients with chrOnic heaRt failure (EMPEROR-Reduced). Co-principal investigators: Cara East, MD; Peter McCullough, MD.

**ENTRIGUE** - A phase 2, randomized, double-blind, placebo-controlled study to explore the efficacy and safety of BIO89-100 in subjects with severe hypertriglyceridemia. Principal investigator: Cara East, MD.

**GENETICURE** - Association between a multi-gene panel and renal denervation effectiveness in patients with hypertension (GxRDxHTN). An observational study designed to assess whether renal denervation (RDN) effectiveness using the Symplicity Spyral™ multi-electrode renal denervation system is associated with ranked genomic scoring from the Geneticure multi-gene algorithm for renal denervation. The study will assess if subjects who have a high genetic score, based on the hypothesized importance of the organ systems involved, will have differential responsiveness to RDN in a descending order. Principal investigator: Cara East, MD.

**GUARD** - A multi-center, prospective, parallel group, double-blind, randomized, placebo-controlled, phase II study of BB3 to assess the safety and efficacy of BB3 in patients developing acute kidney injury after cardiac surgery: The GUARD Study (Guard Against Renal Damage). Principal investigator: Robert F. Hebel, Jr., MD.

**HERITAGE** - A multi-center cross-sectional epidemiological study to characterize the prevalence and distribution of lipoprotein(a) levels among patients with established cardiovascular disease. Principal investigator: Cara East, MD.

**HORIZON** - A randomized double-blind, placebo-controlled, multi-center trial assessing the impact of lipoprotein (a) lowering with TQJ230 on major cardiovascular events in patients with established cardiovascular disease: HORIZON outcomes study. Co-principal investigators: Cara East, MD; Peter McCullough, MD.

**ON-X PROACT** - On-X® Valve Using Low Dose Anticoagulation. Principal Investigator: Robert Smith, MD.

**PARADISE** - A multi-center, randomized, double-blind, active-controlled, parallel group phase 3 study to evaluate the efficacy and safety of Entresto™ compared to Ramipril on morbidity and mortality in high-risk patients following an acute myocardial infarction. Principal investigator: Cara East, MD.

**PERSPECTIVE** - A multi-center, randomized, double-blind, active-controlled study to evaluate the effects of LCZ696 compared to valsartan on cognitive function in patients with chronic heart failure and preserved ejection fraction. Principal investigator: Cara East, MD.

**QUARK 309** - A randomized, double-blind, placebo controlled, phase 3 study to evaluate the efficacy and safety of QPI-1002 for the prevention of major adverse kidney events (MAKE) in subjects at high risk for acute kidney injury (AKI) following cardiac surgery. Principal investigator: Robert Hebel, MD.

**SPYRAL OFF MED** - Global clinical study of renal denervation with the symplicity spyral multi-electrode renal denervation system in patients with uncontrolled hypertension in the absence of antihypertensive medications: SPYRAL Study. Principal investigators: James W. Choi, MD; Cara East, MD.

**SPYRAL ON MED** - Global clinical study of renal denervation with the symplicity spyral multi-electrode renal denervation system in patients with uncontrolled hypertension on standard medical therapy. Principal investigators: James W. Choi, MD; Cara East, MD.



**SPYRAL DYSTAL** - Global clinical study of renal denervation in the distal main and first order branch renal arteries using the Symplicity Spyral multi-electrode renal denervation system: Principal investigators: James W. Choi, MD; Cara East, MD.

**VESALIUS** - A double-blind, randomized, placebo-controlled, multi-center study to evaluate the impact of evolocumab on major cardiovascular events in patients at high cardiovascular risk without prior myocardial infarction or stroke - VESALIUS Study. Principal investigator: Cara East, MD.

**WAVE** - Prospective, randomized, controlled, multi-center study comparing the merit WRAPSODY endovascular stent graft to percutaneous transluminal angioplasty for treatment of venous outflow circuit stenosis or occlusion in hemodialysis patients: The Wave Study. Principal investigator: Stephen Hohmann, MD

#### Fort Worth Site Clinical Trials

**ALN TTR02 012** - This is an observational study to evaluate the effectiveness of Patisiran in patients with polyneuropathy of hereditary transthyretine-mediated amyloidosis with a V122I or T60A mutation. Principal investigator: Salman Gohar, MD.

**AMPLATZER™ AMULET™ LAA Occluder Trial** - Designed to evaluate the safety and effectiveness of the AMPLATZER Amulet Left Atrial Appendage Occluder. Study participants were randomized in a 1:1 ratio between the Amulet LAA occlusion device (treatment) or the Watchman® LAA closure device (control). Study is now in follow-up stage with patients. Principal investigator: Craig Delaughter, MD.

**CATALYST** - A clinical trial of atrial fibrillation patients to evaluate the safety and effectiveness of the Amulet device compared to NOAC therapy in patients with non-valvular AF at increased risk of ischemic stroke who are recommended for long-term NOAC therapy. Principal investigator: Scott Ewing, DO.

**GUIDE-HF** - Hemodynamic-Guided Management of Heart Failure study evaluates heart failure patients with recent heart failure hospitalizations and NYHA II or III or IV and the effectiveness of the CardioMEMS HF System device. Principal investigator for Fort Worth: Salman Gohar, MD.

**OPTION** - A study to determine if left atrial appendage closure with the WATCHMAN® FLX device is a reasonable alternative to oral anti-coagulation following percutaneous catheter ablation for high-risk patients with non-valvular atrial fibrillation. Principal investigator: Craig Delaughter, MD.

**WAVECREST** - A prospective, multi-center, randomized, active controlled, clinical trial of the Coherex WaveCrest® Left Atrial Appendage Occlusion System compared to the Watchman® LAA Closure Device for the reduction in risk of ischemic stroke or systemic embolism in subjects with non-valvular atrial fibrillation that have an appropriate rationale to seek a non-pharmacologic alternative to chronic oral anticoagulation. Patients are in follow-up. Principal investigator: Craig Delaughter, MD

## Distinguished Cardiovascular Leaders

### Distinguished Scholar in Cardiovascular Science



**Milton Packer, MD**, distinguished scholar in Cardiovascular Science at Baylor Scott & White Heart and Vascular Institute, an internationally recognized expert on heart failure, continued in his leadership role in FY21 by participating as an investigator in several clinical trials, serving as a speaker at national and international conferences, and authoring or co-authoring a number of publications. He is also a recent recipient of the Hellenic Heart Failure Society Lifetime Achievement Award.

Dr. Packer's featured and keynote speaking engagements in fiscal year 2021 included:

- Cardiovascular Symposium sponsored by the University of Toronto, Canada, May 2020.
- Cardiovascular symposium sponsored by Imperial College, London, UK, July 2020.
- International Cardiometabolic Meeting (eSPACE), July 2020.
- European Society of Cardiology Symposium sponsored by Charité - Universitätsmedizin Berlin, August 2020.
- American Society of Nephrology, September 2020.

- Cardiovascular Institute of Philadelphia Cardiovascular Symposium, October 2020.
- Translational Medicine Academy, Basel, Switzerland, October 2020.
- Cardiovascular Clinical Trialists Forum, Washington DC, December 2020.

A prolific author, Dr. Packer published more than 50 papers in peer-reviewed journals in fiscal year 2021. Some of the articles he authored or co-authored included:

- Packer M, Butler J, Filippatos G, Zannad F, Ferreira JP, Zeller C, Brueckmann M, Jamal W, Pocock SJ, Anker SD, for the EMPEROR Trial Committees and Investigators. Design of a prospective patient-level pooled analysis of two parallel trials of empagliflozin in patients with established heart failure. *Eur J Heart Fail.* 2020;22:2393-2398.
- Packer M. A compelling case for less aggressive arrhythmia management in patients with chronic heart failure and long-standing atrial fibrillation. *J Card Fail.* 2020;26:85-92.
- Packer M, Grayburn PA. New evidence supporting a novel conceptual framework for distinguishing proportionate and disproportionate functional mitral regurgitation. *JAMA Cardiol.* 2020;5:469-475.
- Packer M, Lam CSP, Lund LH, Maurer MS, Borlaug BA. Characterization of the inflammatory-metabolic phenotype of heart failure and a preserved ejection fraction: A hypothesis to explain the influence of gender on the evolution and potential treatment of the disease. *Eur J Heart Fail.* 2020;22:1551-1567.
- Iborra-Egea O, Santiago-Vacas E, Yurista SR, Lupón J, Packer M, Heymans S, Zannad F, Butler J, Pascual-Figal D, Núñez J, de Boer RA, Bayés-Genís A. Unravelling the molecular mechanism of action of empagliflozin in heart failure with reduced ejection fraction with or without diabetes. *JACC Basic Transl Sci.* 2020;4:831-840.

- McMurray JJV, Jackson A, Lam CSP, Redfield MM, Anand IS, Ge J, Maggioni AP, Martinez F, Packer M, Pfeffer MA, Pieske B, van Veldhuisen DJ, Zannad F, Zile MR, Cikes M, Goncalvesova E, Katova T, Kosztin AM, Lelonek M, Sweitzer N, Vardeny O, Jhund P, Solomon SD. Effects of sacubitril-valsartan, versus valsartan, in women compared to men with heart failure and preserved ejection fraction: Insights from PARAGON-HF. *Circulation.* 2020;141:338-351.

- Sannino A, Sudhakaran S, Milligan G, Chowdhury A, Haq A, Szerlip M, Packer M, Paul A. Grayburn PA. Effectiveness of medical therapy for functional mitral regurgitation in heart failure with reduced ejection fraction. *J Am Coll Cardiol.* 2020;76:883-884.

In fiscal year 2021, Dr. Packer continued to be a highly respected educator, working with cardiovascular fellows on the Baylor Dallas campus and serving as a visiting professor at the University of Chicago and at Harvard Medical School. He also continued his professorship and faculty appointment at the Imperial College in London, UK.



**William C. Roberts, MD, MACC**  
**Healing hearts through education,  
 writing and leadership**

During his 28-year career at Baylor University Medical Center and Baylor Scott & White Heart and Vascular Hospital – Dallas, William C. Roberts,

MD, MACC, has been a leader, a writer/editor, an educator, and an internationally recognized authority on cardiac pathology. He has been the guiding force behind several innovative patient programs.

Today, Dr. Roberts continues to guide patients and cardiologists in his multiple roles as executive director of the Baylor Scott & White Heart and Vascular Institute, editor-in-chief of the *American Journal of Cardiology* and *Baylor Dallas Proceedings*, and dean of the A. Webb Roberts Center for Continuing Medical Education.

Perhaps one of the initiatives of which he is most proud is the founding of the Heart-to-Heart program, a first-of-its kind interactive program for heart transplant patients that's been emulated across the country and around the world. In its seventh year, more than 160 Baylor Dallas heart transplant patients have been amazed and overwhelmed by the opportunity to hold their old diseased heart in their hands, listening to Dr. Roberts describe what went wrong with their old heart and learning how they can protect the health of their new heart. The experience has been life-changing for many participants, with some tearing up at the sight of their diseased heart, knowing they've been given a second chance with a new one. The program gained national attention when the *The American Cardiology Journal Online* published an article in April 2020.

In fiscal year 2021, Dr. Roberts conducted educational sessions for the Baylor Scott & White Research Institute's internship program in an environment devoted exclusively to cardiac pathology research. This eight-week-long program offers a wide range of opportunities educating the interns (18 years and older) in the high global prevalence of cardiovascular disease, which remains the number one cause of death worldwide. Students study the underlying causes of cardiovascular diseases through hands-on examination of specimens and through a variety of research. In doing so, they are able to produce fact-based editorials for publication.

Students also participate in weekly cardiovascular conferences, attend cardiovascular specimen dictations and review histology sections for final diagnosis. Combined with working in a fast-paced office environment, their internship becomes one complete experience centered around the sciences, ethics and humanity.

Having earned the American College of Cardiology's Lifetime Achievement Award in 2016, Dr. Roberts isn't satisfied to rest on his laurels. He continues to serve as a mentor to the Baylor Dallas cardiology fellows and he is an avid advocate for proactive heart health maintenance by espousing the virtues of a plant-based diet, heart-healthy exercise and overall good nutrition.



Kennedy Ngungutau, heart transplant patient, and Dr. Roberts (2018)

The Accreditation Council for Graduate Medical Education (ACGME) accredits the combined efforts of Baylor University Medical Center and Baylor Scott & White Heart and Vascular Hospital – Dallas for the nationally recognized fellowship programs. In fiscal year 2021, active fellowship programs included Cardiovascular Disease, Interventional Cardiology, Cardiac Electrophysiology, Advanced Heart Failure and Cardiac Transplantation, Vascular Surgery, and Cardiothoracic Surgery.

### Clinical Cardiology Fellowship

This ACGME-accredited program participates in the National Residency Match Program. Four positions are offered annually for three years of training in the clinical fellowship program. Training is broad-based and includes experience in the coronary care unit, cardiac surgical intensive care, cardiac catheterization laboratory, cardiac electrophysiology laboratory, cardiac non-invasive laboratory, and peripheral vascular labs. Fellows gain extensive experience in electrocardiography; echocardiography; rhythm monitoring; stress testing, including exercise and pharmacologic stress testing; nuclear imaging; peripheral vascular imaging; cardiac computed coronary angiography; magnetic resonance imaging; pacemaker and cardio defibrillator implantation and programming. Coordinating with the busy Baylor University Medical Center emergency department medical staff, fellows gain experience in emergency cardiovascular care. Active participation in research projects, exposure to clinical trials and authorship on original scientific publications assist the cardiovascular disease fellows with developing critical thinking to be applied for innovative cardiovascular treatment and care in the future. Baylor Dallas fellows are challenged to integrate data into well-communicated, evidence-based patient consultations, while remaining mindful of the unique features of each and every patient. Fellows also have exposure to the Baylor Scott & White Tom Landry Health and Wellness Center and the Cardiac Rehabilitation and Return to Work programs.

### Interventional Cardiology Fellowship



**Program Director:**  
 Ravi Vallabhan, MD, FACC, FSCAI

**Fellow:** Anas Hamadeh, MD  
**Incoming Fellow July 2021:**  
 Brian Simpson, MD

This one-year ACGME-accredited training program accepts one fellow annually. The program offers a broad-based learning experience in all aspects of interventional cardiology with clinical training in coronary interventional procedures, peripheral interventions, valvular heart interventions, and structural heart procedures. Experience and training in a longitudinal ambulatory clinic are also included as part of the fellowship. Advanced percutaneous interventions include balloon angioplasty, coronary stenting, CTO interventions, intravascular ultrasound, rotational atherectomy, thrombectomy, distal protection devices, IVUS, and pressure wire evaluation. In addition to carotid and peripheral interventions, valvular heart interventions include TAVR, percutaneous mitral valve repair and mitral balloon valvuloplasty. Structural heart interventions consist of ASD, PFO, PDA, and LAA closures. The Baylor Scott & White Heart and Vascular Hospital – Dallas cardiac catheterization laboratory performs more than 4,500 diagnostic cardiac procedures and more than 1,600 coronary interventions annually.



**Program Director:**  
 Peter McCullough, MD, MPH, FACC, FACP, FAHA, FCCP, FNKF, FNLA, FCRSA (Through January 2021)

**Program Director:**  
 Michael Sills, MD (January 2021 - present)

**Associate Director:**  
 Jeffrey M. Schussler, MD, FACC, FSCAI, FSCCT, FACP

**Fellows:**  
**3rd Year:**  
 Ossama Elsaid, MD  
 Gregory Milligan, MD, MPH  
 Bharath Raju, MD, MS  
 Taimur Safder, MD, MPH

**2nd Year:**  
 Justin Arunthamakun, MD  
 Elie Dib, MD  
 Kathleen Kopecky, MD, MS  
 Ronak Rengarajan, MD

**1st Year:**  
 John Cochran, MD  
 Travis DeSa, MD  
 Srikant Patlolla, MD  
 Sivakumar Sudhakaran, MD

**Incoming Fellows  
 July 2021:**  
 James Blair, MD  
 Milan Ravishankar, MD  
 Brian Shipley, MD  
 Patrick Strickland, MD



### Cardiac Electrophysiology Fellowship



**Program Director:**  
Manish D. Assar, MD, FACC, FHRS

**Fellow:** Joshua Rutland, MD  
**Incoming Fellow July 2021:**  
Fuad Habash, MD

One fellow is accepted every two years into this Baylor University Medical Center and Baylor Scott & White Heart and Vascular Hospital – Dallas fellowship, which fulfills the two-year ACGME requirement. Key to the program is that it takes place at a quaternary referral center for the Southwest United States. Thus, it provides fellows with rigorous diagnostic and procedural exposure and refines electrophysiology skills that also enhance the outpatient management of patients. Involvement in clinical research and scientific publications is required. Baylor Scott & White Heart and Vascular Hospital – Dallas has a total of four electrophysiology suites (EP) where the EP fellows have the opportunity to observe and learn from more than 4,000 cases that are performed annually. These include advanced procedures ranging from cryoballoon ablation for atrial fibrillation, laser lead extraction of devices and ischemic VT ablations using CARTO and ESI mapping systems. To encourage a well-rounded electrophysiologist’s skill set, the fellow is continually exposed to clinical evaluation and indications for tests and procedures in conjunction with history and physical exams supervised by an attending physician.

### Advanced Heart Failure and Cardiac Transplantation Fellowship



**Program Director:**  
Parag Kale, MD, FACC, FHSA

**Fellows:**  
Venugopal Bhattad, MD;  
Arpan Patel, MD; Nishi Patel, MD  
**Incoming Fellows July 2021:**  
Ifrah Abdirahman; Gregory Milligan, MD;  
Mahmoud Salem

This fellowship program accepts one to three fellows every year for one year of clinical training in all medical phases of cardiac transplantation and advanced circulatory support. This includes procedural training in cardiac biopsy, IVUS and percutaneous hemodynamic support devices. Since inception, Baylor University Medical Center has completed more than 615 heart transplants and has been heralded as one of the premier solid organ transplantation centers in the nation. The fellowship is supported by cardiovascular surgeons and transplant cardiologists.

### Vascular Surgery Fellowship



**Program Director:**  
Stephen Hohmann, MD, FACS

**Fellows:**  
Ashlee Vinyard, MD; Christopher Henry, MD; Lauren Beliveau, MD;  
Gabriel Gonzalez, MD  
**Incoming Fellows July 2021:**  
Erica Davanian, MD; William Fleischer, MD

More than 56 years ago, pre-eminent vascular surgeon, Jesse Thompson, MD, launched only the second Vascular Surgery Fellowship in the country at Baylor University Medical Center, helping train and advance what was at the time a burgeoning surgical subspecialty. Since coming under the Baylor Scott & White Heart and Vascular Hospital – Dallas banner, the fellowship has grown in prestige alongside the entire hospital’s vascular services offerings and volumes. Baylor Scott & White Heart and Vascular Hospital – Dallas celebrated the program’s 55th anniversary in 2020. More than 124 fellows have graduated from the program and gone on to provide vascular surgical care to patients the world over. Quality and service excellence have always been hallmarks of the vascular specialists on the hospital medical staff, in addition to a commitment to offering advanced treatment options in vascular surgery that are not always widely available.

### Cardiothoracic surgery fellowship



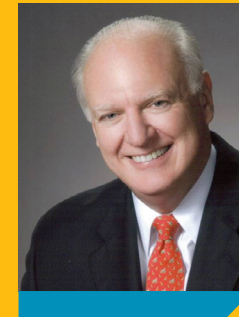
**Program Director:**  
Dan Meyer, MD

**Fellow:**  
Andres Leal, MD  
**Incoming Fellow July 2021:**  
Victoria Lam, MD

Each year since 2012, Baylor University Medical Center accepts one candidate for this fellowship. Candidates for this fellowship will have completed a cardiac surgery residency. During this time, the fellow obtains a significant amount of experience and competence in donor operations, heart transplants and mechanical circulatory support. Upon completion of their fellowship, the surgical fellow will be trained in the areas of preoperative evaluation of transplant recipients, surgical techniques for heart transplantation, post-operative management in the intensive care unit, acute care management, post-transplant complications treatment, as well as proficient in research in the field of transplantation. Baylor University Medical Center has a high volume mechanical circulatory support program. In addition, since the heart transplant program’s inception at Baylor Dallas, there have been more than 1,100 heart transplants.

### Board of Managers\*

The board of managers for Baylor Scott & White Heart and Vascular Hospital is comprised of 13 members. Seven of the members are appointed by Baylor University Medical Center, and six are elected by the physician owners. Many of the members of the board are representatives of the community or medical staff leaders who volunteer their time to governance responsibilities.



**Michael L. Graham, JD**  
Chair, Board of Managers of Baylor Scott & White Heart and Vascular Hospital



**C.T. Beckham**



**Sarah Gahm, MHA**  
SVP/President, Clinic Operations – Baylor Scott & White Health



**Shelley Hall, MD, FACC, FHSA, FAST**



**Richard Lockwood**



**J. Kent Newsom, JD**



**Timothy Owens**



**Rohit Parmar, MD, FACC**



**Scott Peek, MBA, FACHE**  
Senior Vice President / Joint Ventures – Baylor Scott & White Health



**Javier (Jay) Vasquez, MD, RPVI, FACS**



**Robert Stoler, MD, FACC, FSCAI**



**Kevin Wheelan, MD, FACC**



**Don Wills, JD**

\*Fiscal year 2021



## Cardiovascular Medical Leadership – Dallas

FY21 Ending June 30, 2021. For a current listing of medical leaders: [BSWHealth.com/DFWHeartLeadership](https://www.bswhealth.com/DFWHeartLeadership)



**Kevin Wheelan, MD, FACC**

Chief Medical Officer, Co-Medical Director of Cardiology – Baylor Scott & White Heart and Vascular Hospital – Dallas; Director, Division of Cardiology – Baylor University Medical Center; Medical Director, Cardiovascular Research, Quality and Standardization – Baylor Scott & White Health – North Texas



**Jeffrey M. Schussler, MD, FACC, FSCAI, FSCCT, FACP**

Medical Director, Cardiovascular Intensive Care Unit; Medical Director, Cardiac Rehabilitation – Baylor Scott & White Heart and Vascular Hospital – Dallas

*Incoming Chief Medical Officer*



**Manish D. Assar, MD, FACC, FHRS**

Program Director, Cardiac Electrophysiology Fellowship Program – Baylor University Medical Center; incoming Medical Director, Electrophysiology – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Kenneth Ausloos, MD**

Medical Director, Pulmonology – Baylor Scott & White Heart and Vascular Hospital – Dallas; Medical Director, Pulmonary Hypertension Clinic and Lung Transplant – Baylor University Medical Center



**Raul Benavides, MD**

Medical Director, Laboratory – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Cristie Columbus, MD**

Medical Director, Infectious Diseases – Baylor Scott & White Heart and Vascular Hospital – Dallas; Training Program Director – Baylor University Medical Center



**William Dockery, MD, FACR**

Medical Director, Radiology – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Cara East, MD, FAPCR, FACP, FACC**

Director – Soltero Cardiovascular Research Center; Clinical Professor – Texas A&M College of Medicine



**John F. Eidt, MD, RVT, RPVI, FACS**

Vice Chair, Vascular Surgery – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Cesar Guerrero-Miranda, MD, FHFSa**

Medical Director, Ventricular Assist Device Program – Baylor University Medical Center



**Shelley Hall, MD, FACC, FHFSa, FAST**

Chief, Transplant Cardiology, Mechanical Circulatory Support and Heart Failure – Baylor University Medical Center



**Albert C. Henry, MD**

Medical Director, Quality – Cardiovascular Surgery Services – Baylor University Medical Center



**Stephen Hohmann, MD, FACS**

Program Director, Vascular Surgery Fellowship Program – Baylor University Medical Center



**Parag Kale, MD, FACC, FHFSa**

Program Director, Advanced Heart Failure and Cardiac Transplantation Fellowship Program – Baylor University Medical Center



**Roger Khetan, MD**

Medical Director, Quality – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Dan Meyer, MD**

Chief, Heart Transplantation and Advanced Circulatory Support – Baylor University Medical Center  
Program Director, Cardiothoracic Transplant Surgery and Mechanical Circulatory Support Fellowship Program – Baylor University Medical Center



**Peter A. McCullough, MD, MPH, FACC, FACP, FAHA, FCCP, FNKF, FNLA, FCRSA**

Medical Director, Cardiology Fellowship Program (through January 2021) – Baylor University Medical Center



**Stuart Owen, MD**

Medical Director, Credentials – Baylor Scott & White Heart and Vascular Hospital – Dallas and Fort Worth



**Rohit Parmar, MD, FACC**

Patient Safety Officer – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Gregory J. Pearl, MD, FACS**

Co-Medical Director, Vascular Surgery – Baylor Scott & White Heart and Vascular Hospital – Dallas, Baylor University Medical Center



**Michael Ramsay, MD, FRCA**

Chief, Department of Anesthesia and Pain Medicine – Baylor University Medical Center; Medical Director, Anesthesia Services – Baylor Scott & White Heart and Vascular Hospital – Dallas; President, Baylor Scott & White Research Institute



**Charles S. Roberts, MD**

Chief, Cardiovascular Services; Chair, Cardiac Surgery; Medical Director, Cardiovascular Education – Baylor University Medical Center



**William C. Roberts, MD, MACC**

Executive Director, Baylor Scott & White Heart and Vascular Institute – Baylor University Medical Center



**Michael Sills, MD**

Medical Director, Cardiology Fellowship Program – Baylor University Medical Center (January 2021 to present)



**Bertram Smith III, MD, FACS**

Medical Director, Non-Invasive Vascular Laboratory – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Robert Stoler, MD, FACC, FSCAI**

Co-Medical Director, Cardiology; Medical Director, Catheterization Laboratory – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Anumeha Tandon, MD**

Medical Director, Structural Heart Echocardiography Imaging Program – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Ravi Vallabhan, MD, FACC, FSCAI**

Program Director, Interventional Cardiology Fellowship Program – Baylor University Medical Center



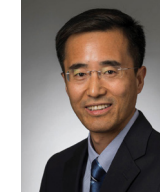
**Javier (Jay) Vasquez, MD, RPVI, FACS**

Medical Director, Surgical Safety – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Carlos Velasco, MD, FACC**

Medical Director, Cardiology Quality Assurance and Peer Review – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Haojie Wang, MD, PhD, FACC, RPVI**

Medical Director, Advanced Cardiovascular Imaging Program – Baylor Scott & White Heart and Vascular Hospital – Dallas



**Detlef Wencker, MD, FHFSa**

Medical Director, Advanced Heart Failure – Baylor University Medical Center



## Cardiovascular Medical Leadership - Fort Worth

FY21 Ending June 30, 2021. For a current listing of medical leaders: [BSWHealth.com/DFWHeartLeadership](http://BSWHealth.com/DFWHeartLeadership)



**Mohan Sathyamoorthy, MD, FACC**  
 Chief, Cardiology Division - Baylor Scott & White All Saints Medical Center - Fort Worth;  
 Medical Director, Cardiology - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**J. Vijay Jayachandran, MD, FACC, FHRS**  
 Medical Director, Patient Safety - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**Farhan Ali, MD, MA, MPH, FACC, FSCAI, RPVI**  
 Medical Director, Interventional Cardiology - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**George Khammar, MD, FACC**  
 Medical Director, Structural Heart Disease Program - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**Craig Delaughter, MD, PhD, FACC, FHRS**  
 Medical Director, Electrophysiology - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**Arun Padala, MD, FACC**  
 Medical Director, Non-Invasive Cardiology - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**Scott Ewing, DO**  
 Medical Director, Quality - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**Steve Simpson, MD**  
 Medical Director, Carter Cardiac Rehabilitation - Baylor Scott & White Heart and Vascular Hospital - Fort Worth



**Salman Gohar, MD, FACC**  
 Medical Director, Advanced Heart Failure and Mechanical Circulatory Support Service - Baylor Scott & White All Saints Medical Center - Fort Worth



**Jeffrey Wu, MD**  
 Chief, Cardiovascular and Thoracic Surgery (April 2021 to present) - Baylor Scott & White Heart and Vascular Hospital



**Gonzalo V. Gonzalez-Stawinski, MD**  
 Chief, Cardiovascular and Thoracic Surgery (through April 2021) - Baylor Scott & White All Saints Medical Center - Fort Worth



**Referral Line** .....1.844.742.7963

**Scheduling**.....214.820.0128

- Calcium Score Screening
- Procedure Scheduling
- Outpatient Testing and Imaging

**Emergent Aortic Patient Transfer Center** .....214.820.6444

**President, Chief Nursing Officer**.....214.820.0660

- Nancy Vish, RN, PhD, NEA-BC, FACHE

### Dallas

Main Hospital Line.....214.820.0600

Advanced Heart Failure Clinic/ Heart Transplant .....214.820.6856

Advanced Imaging Center.....214.820.0160

Aortic Center.....214.820.4876

Cardiac Rehabilitation.....214.820.2109

Cardiovascular Second Opinions.....214.820.7162

Center for Valve Disorders.....214.820.3604

Heart Rhythm Center.....214.820.5306

Hispanic Cardiovascular Institute.....214.820.0390

### Fort Worth

Main Hospital Line.....817.926.2544

Cardiac Rehabilitation.....817.922.1139

Heart Rhythm Center.....817.825.1374

Valve Disorders Center.....817.825.1374



### Baylor Heart Center app

The Baylor Heart Center app makes finding a physician on the medical staff at Baylor Scott & White Heart and Vascular Hospital in Dallas and Fort Worth simple. Features include:

- Contact information for specialists
- Direct lines to transfer a patient
- ECMO referral guidelines
- Clinical trials

Your patient can prepare for an upcoming visit at the hospital with resources in the app, including a 360-degree tour of our facilities and guided meditation videos to manage stress. Pair your session with your Apple Watch to record your heart rate and monitor progress.

**Download today by searching Baylor Heart Center on the Apple App Store or scanning the QR code.**



*This book is available on our website at [BSWHealth.com/DFWHeartOutcomes](http://BSWHealth.com/DFWHeartOutcomes). If you have feedback on this book, email: [Navigator@BSWHealth.org](mailto:Navigator@BSWHealth.org).*

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[BSWHealth.com/HeartDallas](http://BSWHealth.com/HeartDallas)  
621 N. Hall Street  
Dallas, TX 75226



[BSWHealth.com/HeartFortWorth](http://BSWHealth.com/HeartFortWorth)  
1400 8th Avenue  
Fort Worth, TX 76104

