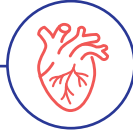


# Cardiovascular

*2024 Annual Report*





## **Our Mission**

*Helping people live  
the healthiest lives possible®*

## **Our Vision**

*Be a model health system  
by providing extraordinary care  
and superior service at an  
affordable cost*

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# Introduction

We are happy to share with you our 2024 Cardiovascular Annual Report. Intermountain Health's mission is to "help people live the healthiest lives possible". Those that work for Intermountain recognize that these are not just hollow words. In the cardiovascular program we know to fulfill this mission, we must proactively work together with our patients and communities to improve their overall health. This requires uniquely altruistic individuals and teams who prioritize character and culture above all else and who also believe in our vision and share our values. These values (below) attract people from all over the world to come and work for Intermountain.

***We are leaders in clinical excellence***

***We believe in what we do***

***We serve with empathy***

***We are partners in health***

***We do the right thing***

***We are better together***

In the Heart and Vascular program at Intermountain we continue to move the needle on cutting-edge technologies, therapies, care pathways, and research. Using an evidence-based and team-based approach we strive for excellence in innovation, quality, research, and education. Our clinical outcomes are amongst the top in the nation. Our ability to deliver this care is also amongst the lowest cost in the nation. Though we are proud of these accomplishments, our true ethos drives us to do all we can to prevent these conditions in the first place. Balancing innovative technologies and therapies with large scale preventative strategies is not an easy task, however our cardiovascular teams are committed to this worthy task.

We are humbled to collaborate with such talented individuals and teams that prioritize character and culture above all else. Together, we are proud to share a snapshot of their very impressive accomplishments in this report.

Sincerely,

## The Cardiovascular Clinical Program Team



**Blake I. Gardner, MD**  
Senior Medical Director



**Kaley Graham, MBA, BSN, RN**  
Executive Clinical Director



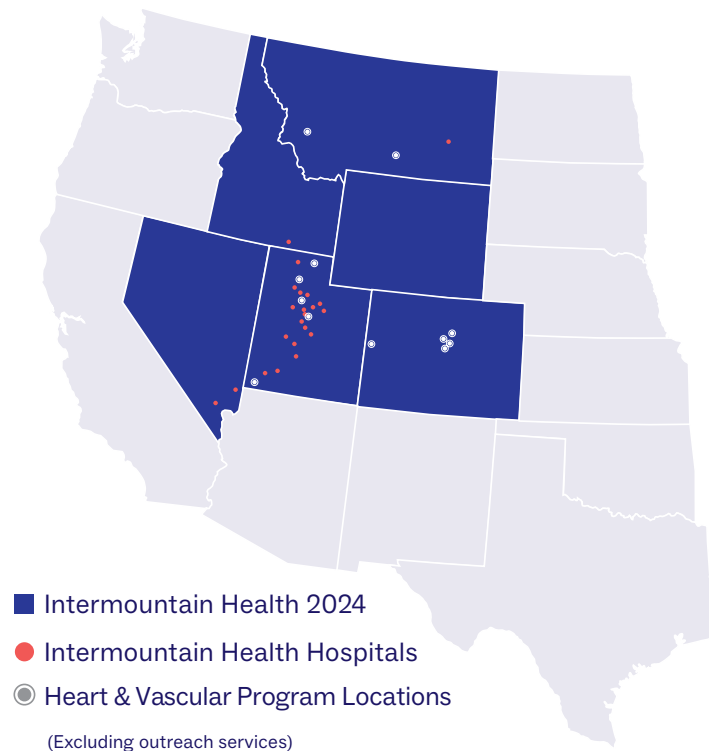
**Suzanne Carlile, MSN, RN**  
Clinical Programs Manager



**Jennifer Stahle**  
Business Operations  
Coordinator

## About Intermountain Health

Intermountain Health is a not-for-profit system of hospitals, a virtual hospital, a Medical Group with 3,800 physicians and advanced practice providers, serving Utah, Idaho, Nevada, Colorado, Montana, and Wyoming.



Services across

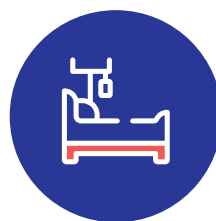
**6**

states



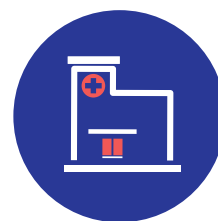
**33**

hospitals



**4,800**

licensed beds



**409**

clinics

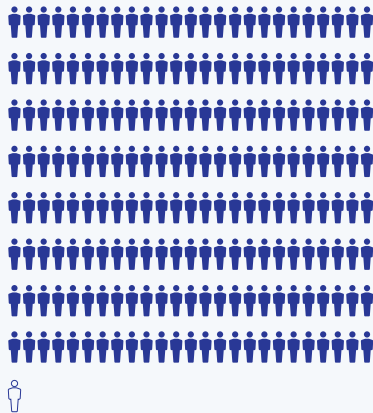
\*This report will include some data from all regions understanding the challenge of obtaining, accessing and the complexity of sharing combined data points using different platforms.



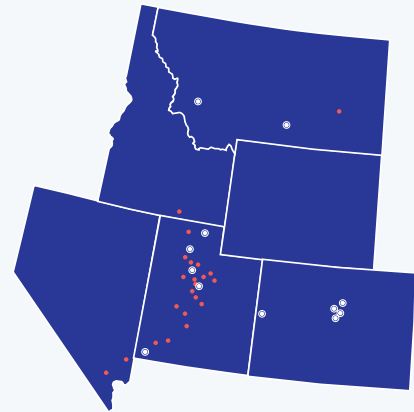
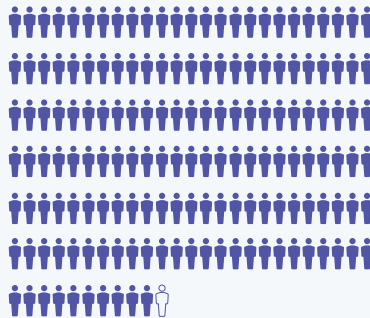
# Cardiovascular Providers & Service Locations

## Canyons, Desert, & Peaks Regions Cardiovascular Provider Snapshot

### Physicians



### Advanced Practice Providers



401 Employed & Affiliated Physicians

320 Employed & Affiliated APPs

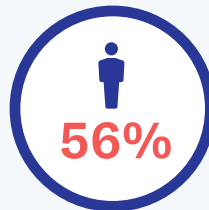
Does not include providers of Primary Children's

♂=2 ♀=1

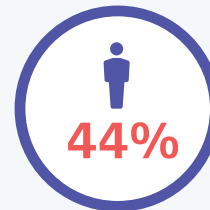
### At a Glance



Heart & Vascular  
Providers



Employed  
& Affiliated Physicians



Employed  
& Affiliated APPs

## Regional Leadership Canyons, Desert, & Peaks

### Canyons



**Kent Meredith, MD**  
Enterprise  
Senior Medical  
Director



**Jason Buckway, MBA  
BSN-RN**  
Region Service Line  
Senior Director



**Howard Broder, MD**  
NV, Senior Medical  
Director



**Zach Williams, MD**  
SW UT, Senior  
Medical Director



**James Neider,  
MBA, BSN-RN**  
Region Service  
Line Director



**Ruchika Husa, MD**  
Senior Medical  
Director



**Vacant**  
Region Service  
Line Director

### Desert

### Peaks

# Intermountain Health Awards and Accreditations

## Peaks Region

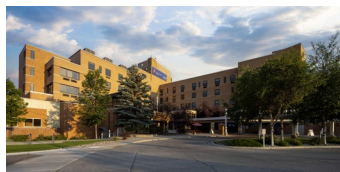
- › All five hospitals achieved Leapfrog Safety Grade A, with the 13th consecutive reporting period for St. Vincent
- › All five hospitals received Chest Pain - MI Registry Platinum Performance Achievement Award
- › All five hospitals earned a Magnet Recognized Designation in Nursing Excellence
- › Montana Association of Cardiovascular & Pulmonary Rehabilitation Montana Outcomes Program Recipient 2023 (St. James)
- › Voluntary Protection Program VPP award which recognizes employers and workers who have implemented effective safety and health management systems
- › St. Mary's Regional Hospital was awarded Vascular Verification status by the American College of Surgeons and the Society for Vascular Surgery
- › 2024 Vascular laboratory imaging lab received IAC accreditation in 4 categories to ensure highest quality imaging
- › St. Mary's Regional Hospital awarded the ACS/SVS Vascular-VP designation
  - St. Mary's is the first community hospital to be recognized with the VPP award which recognizes hospitals for quality of vascular care

## Peaks Region Hospitals providing Cardiovascular services



### St. Vincent Regional Hospital

St. Vincent Regional Hospital is in Billings, Montana is a 286-bed hospital. This facility serves the people of Montana, Wyoming, and western Dakotas. They provide full cardiovascular services by using best practices, clinical excellence and award-winning care and patient management.



### St. James Hospital

St. James Hospital is the largest and only acute care healthcare facility in southwest Montana. This hospital is a 67-bed facility located in Butte, Montana and offers progressive specialty services to their community.



### Holy Rosary Hospital

Holy Rosary Hospital delivers compassionate, quality care to the people of eastern Montana. This facility supports a 25-bed inpatient care and is a critical access hospital.



### St. Mary's Regional Hospital

St. Mary's Regional Hospital is in Grand Junction, Colorado and is a 346-bed facility. St. Mary's is the largest hospital and referral center between Denver and Salt Lake City; providing Level II Trauma, Chest Pain Center, Cath Lab, and Vascular services for the region. It prides itself on meeting the highest standards for effective and efficient evaluation and treatment of heart and vascular disease management and care.



### Saint Joseph Hospital

Saint Joseph is located in Denver, Colorado and provides comprehensive cardiovascular services. It is the largest private teaching hospital in Denver, Colorado and is a 364-bed facility. The hospital provides a tradition of compassionate caregivers, clinical expertise and partnership with their community.



### Lutheran Hospital

Lutheran hospital is a newly constructed hospital located in Wheat Ridge, Colorado. With this new construction, Lutheran is elevating health care in the region with a well-designed, efficient, and flexible facility designed with the patient and staff top-of-mind. A unique feature is that most rooms will have the ability to be converted to ICU standards if needed. Expansion: The new

Lutheran Hospital opened in August 2024, expanding access and state-of-the-art cardiovascular care in Wheat Ridge and surrounding communities west of Denver. With brand new cath labs and advanced capabilities, our collaborative team of interventional cardiologists, electrophysiologist, and heart experts were able to perform the first Watchman procedure at Lutheran Hospital.



### Good Samaritan Hospital

Good Samaritan Hospital is a full-service hospital and is 234-bed facility serving 5 counties in Northern Colorado. This hospital is a Level II Trauma Center that provides exceptional clinical services, award-winning care and provides a place of healing for the community. Our comprehensive electrophysiology program also expanded at Platte Valley Hospital in Brighton,

successfully offering minimally invasive procedures like cryoablation and routine heart rhythm care for patients with atrial fibrillation. Serving the community as our mission of providing equitable care.



### Platte Valley Hospital

Platte Valley Hospital is in Brighton, Colorado and provides a range of cardiovascular services. This is a 98-bed community hospital and Level III Trauma Center. In addition to notable hospital and program growth, Intermountain Health Heart and Vascular established three new satellite clinic locations in Aurora, Thornton, and Golden to serve extended communities with exceptional cardiovascular care where it's needed most.

## Canyons Region

1. Extracorporeal Life Support Organization (ELSO) awarded Intermountain Medical Center's ECMO program the Gold Center of Excellence
2. Heart Failure/Transplant team was awarded the Heart Failure Society of America's Outstanding Care Team Award
3. Best Hospitals for Heart Care 2025 in Utah—Women's Choice Award
4. CV Research awarded NIH R01 \$2.4 million grant – 'Impact of Advance Imaging & Enhanced Risk Profiling of Mitral Valve Prolapse'
5. Intermountain Medical Center ranked 3rd in lowest 30-day mortality (Beckers Hospital Review)



6. Intermountain Medical Center ranked 5th lowest in readmission rates for Heart Failure Patients according to Beckers Hospital Review
7. Intermountain Medical Center made the list for one of the Premier's Top 50 Cardiovascular Hospitals in the country
8. Intermountain Medical Center #3 in the nation for Teaching Hospitals with CV Residency Program according to Fortune
9. Intermountain Medical Center received the HFSA Outstanding Heart Failure Care Team Award
10. McKay-Dee Hospital ranked 3rd lowest readmission rates for Heart Failure Patients according to Beckers Hospital Review
11. McKay-Dee Hospital recognized as the #1 teaching hospital in the nation without a cardiovascular residency program by Premier Inc., a subsidiary of Fortune Magazine
12. McKay-Dee received the #1 ranking in the Premier's Top 50 Cardiovascular Hospitals in the country
13. McKay-Dee received Specialty Excellence Awards | Hospital Ratings | Healthgrades
  - America's 250 Best Hospitals Award 2024 and again in 2025
  - Outstanding Patient Experience Award 2024
14. Logan Regional Hospital, McKay-Dee Hospital, and Intermountain Medical Center have all been recognized with a Women's Choice Award for excellence in women's heart care
15. Canyons Leapfrog rating of 'A':
  - › Alta View Hospital
  - › Intermountain Medical Center
  - › LDS Hospital
  - › Logan Regional Hospital
  - › McKay-Dee Hospital
  - › Park City Hospital
  - › Riverton Hospital
  - › Spanish Fork Hospital
  - › Utah Valley Hospital

### Canyons Region Hospitals providing Cardiovascular services



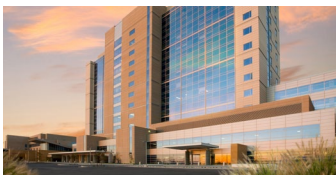
#### Logan Regional Hospital

Logan Regional Hospital is a 148-bed community hospital located in Northern Utah. They provide various cardiovascular services and support for surrounding communities who serves Cache Valley, including Cache County and Franklin County, Idaho, and western Wyoming. This facility is a Trauma III designated center and provides advanced technology.



#### McKay-Dee Hospital

McKay-Dee Hospital is in Ogden, Utah and is a 310-bed facility. This facility provides award-winning care focusing on serving their patients and community. This facility offers full service cardiovascular care and has performed over 500 TAVR procedures.



#### Intermountain Medical Center (IMC)

Intermountain Medical Center is the flagship hospital of Intermountain Health. Located in Murray, Utah and serves as a major adult referral center for six surrounding states and more than 75 regional health care institutions. This hospital is a Level I Trauma Center and has the capacity of 504 inpatient beds. This facility not only provides cardiovascular services but also is heavily involved in research to better the lives of our patients and community.





**Highlight:** In response to the challenge of hiring sonographers and a growing population, IMC implemented the first Cardiac Sonographer on the job training program following the CCI and ARDMS guidelines which have increased the capacity to provide quicker service for patients needing imaging associated with heart disease.



### Utah Valley Hospital

Utah Valley Hospital is in Utah County and provides full services for cardiovascular care and management of cardiac and vascular patients. The facility is a 395-bed full-service tertiary and acute care. This facility is a referral center serving Utah County, central and southern Utah with the designation of a Level II Trauma Center.

## Desert Region

- › St. George Regional Hospital made the list of being one of the Premier's Top 50 Cardiovascular Hospitals in the country
- › Voted best Cardiology of Southern Utah
- › St. George Regional Hospital #1 Vizient hospital in the nation, large specialized complex hospital cohort
- › Cedar City Hospital #4 Vizient hospital in the nation, community hospital cohort
- › St. George Hospital: US News and World Reports: Top Performing Hospital for Heart Failure, Heart Attack, and Heart Bypass Surgery
- › Two Nevada cardiologists named 2024 Top Docs for Nevada by Desert Companion
- › RN named 2024 winner of UNLV's Nurse Trailblazer award for work in Heart Failure
- › "Million Hearts" 2024 - the Centers for Disease Control and Prevention (CDC) has designated Intermountain Health in Nevada as a 2024 Million Hearts® Hypertension Control Champion. The Nevada Medical Group is the first and only state health system to earn this status.

### Desert Region Hospitals providing Cardiovascular services



### St. George Regional Hospital

St. George Regional Hospital is in St. George, Utah and is a major medical referral center for northwestern Arizona, southeastern Nevada and southern Utah. This facility is a 284-bed hospital and adding to their facility capacity quickly due to population growth in the area. This facility offers full services related to cardiovascular care and patient management.



### Las Vegas Medical Group — Cardiology Presence

Intermountain Nevada Cardiology has 22 physicians and 12 APPs providing cardiovascular care to patients across Southern Nevada. In their six cardiology clinics in Las Vegas, Henderson, and Pahrump, they realized more than 100,000 unique patient encounters with providers and for testing and enjoyed steady volumes of clinic visits in 2024. The group expanded their inpatient coverage to now cover six of the thirteen acute care hospitals in the Las Vegas valley where their providers round, do procedures, and provide cardiac care. There are plans to further expand inpatient coverage in 2025. Intermountain Nevada's value-based care contracts and provision of the highest-quality cost-effective care with a focus on keeping patients out of the acute care setting were at the heart of the growth in the Nevada market in 2024.

**Cardiovascular Procedures**

The total cardiovascular procedure volume was steady in 2024 with a slight increase in the number of electrophysiology cases performed. The group will be welcoming a new electrophysiologist in early 2025.

**Delivering Care Outside of the Hospital**

Intermountain Nevada Cardiology developed their first ambulatory cardiology suite in partnership with a local ambulatory surgery center and went live performing cardiovascular cases in the CV ASC in March 2024. This state-of-the-art space provides patients enhanced access for diagnostic coronary angiograms, low-moderate risk coronary intervention, right heart catheterization and peripheral vascular angiograms and interventions, as well as primary implant of pacemaker and internal cardiac defibrillator and generator changes.

The advanced heart failure team began implanting CardioMEMS at the CV ASC in fall 2024. By doing these procedures in the ambulatory setting instead of at one of the partnered acute care hospitals, approximately a 40% cost savings will be realized per case – in 2024 this translated into nearly **\$700,000** in procedural cost savings to patients and organization.

**Heart Failure Program**

The Intermountain Nevada Heart Failure Program continued to grow in 2024, bringing on an additional physician and RN to support the program. With a focus on preventing heart failure admissions and expanding access to ambulatory care, the diuresis clinic had nearly 100 utilizations in 2024. This protocolized, nurse-run clinic helps route patients experiencing heart failure exacerbation to specialized care in the ambulatory setting where they receive rapid assessment, treatment, reinforcement of education to manage their illness, and then go home with close nursing follow-up. In 2024, utilization of the diuresis clinic realized over **\$1,000,000** in cost savings and prevented dozens of heart failure admissions to acute care.

**Catheterization Case Counts in 2024**





# Structural Heart

Our Structural Heart Program at Intermountain Health is a referral center for the Mountain West. We perform a robust variety of structural heart procedures including:

- › Transcatheter Aortic Valve Replacement (TAVR)
- › Transcatheter Mitral Valve Replacement (TMVR)
- › Transcatheter Edge to Edge Repair (TEER) of the mitral valve and tricuspid valve
- › Left Atrial Appendage Occlusion (LAAO)
- › Atrial Septal Defect (ASD) and Ventricular Septal Defect (VSD) closure
- › Patent Foramen Ovale (PFO) closure
- › Paravalvular Leak Closure › Alcohol Septal Ablation
- › Transcatheter Pulmonic Valve Replacement (TPVR)
- › Balloon Valvuloplasty
- › McKay-Dee Hospital has provided 500+ TAVR procedures
- › Intermountain Medica Center transitioned >90% of TAVR cases to a minimal procedure staffing model
  - Appropriate patient procedures were able to be completed utilizing four less OR caregivers which has resulted in improved access for CV OR procedures 5 days/week, decrease cost, and improved efficiency and workflow in the cath lab.

2024	TAVR	Mitral TEER/Clip	TMVR	Tricuspid Procedures	LAAO
System Volume	939	199	24	84	854
System Mortality	1.27%	1.5%	8.3%	1.19%	0

The NCDR Transcatheter Valve Therapy Registry collects information on minimally invasive aortic, mitral, and tricuspid valve replacement and repairs.

Structural Heart :: TAVR / Mitral TEER  
(Less invasive option)



VS

Open Heart :: Valve Surgery  
(More invasive option)





# Structural Heart Research Clinical Trial's Active in 2024

- › **PARADIAM** – Amplatzer Valvular Plug III treatment of Mechanical or Bioprosthetic paravalvular leaks in Aortic or Mitral position

## **AORTIC:**

- › **ALIGN-AR JenaValve** Trilogy Heart Valve System for Transcatheter Aortic Valve Replacement (TAVR) in treatment of surgical risk patients with symptomatic severe aortic regurgitation

## **MITRAL:**

- › **ENCIRCLE – SAPIEN M3** System TMVR via transeptal access in subjects with symptomatic (at least 3+) MR (Sapien M3 for MR with high surgical risk, not optimal for TEER)
- › **REPAIR MR** – MitraClip vs Surgery for Primary Mitral Regurgitation
- › **MITRAL II** – Sapien 3 Mitral Valve Replacement for Patients with Severe Calcific Mitral Valve Disease
- › **HIGHLIFE** – Early Feasibility for Transcatheter Trans-septal Mitral Valve
- › **CARDIOMECH** – Cardiomech Mitral Valve Repair System/Chord Replacement

## **TRICUSPID:**

- › **TRICAV:** TricValve Transcatheter Bicaval Valve System in Subjects with Severe Tricuspid Regurgitation
- › **TANDEM II** – CroiValve Duo Transcatheter Tricuspid Coaptation Valve System for Patients with Tricuspid Regurgitation
- › **Cardioband** – Cardioband FIT device for Transcatheter Tricuspid Valve Repair



The image shows a modern, multi-story medical building with a mix of glass and light-colored stone or concrete panels. The building has several balconies with metal railings. The sky is a mix of blue and orange, suggesting sunset or sunrise. The entrance is covered by a large overhang.

# J. L. SORENSON HEART AND LUNG CENTER

4

SORENSON  
HEART & LUNG  
CENTER





# Advanced Heart Failure & Cardiac Transplant Program

**Intermountain Medical Center** is a quaternary referral center for advanced heart failure and cardiomyopathy specialty clinics. Care is provided by board-certified advanced heart failure and transplant cardiologists and advanced practice providers.

## Advanced Heart Failure Clinic Offers:

- Mechanical Circulatory Support
- Heart Transplantation
- Hypertrophic Cardiomyopathy Center of Excellence
- Cardio-Oncology consultation service
- Research and clinical trials
- Genetic screening and counseling for familial cardiomyopathies

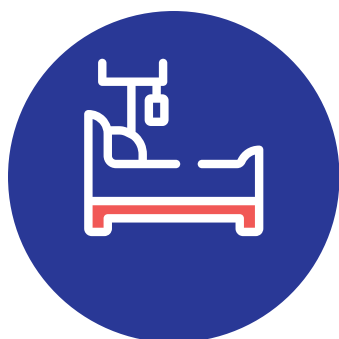
## Outreach

- St. Vincent Regional Hospital–Billings, Montana
- St. Luke's Boise Medical Center–Boise, Idaho
- St. Mary's Regional Hospital–Grand Junction, Colorado

Intermountain Medical Center		National CMS Benchmark	2023 – Intermountain Health			2024 – Intermountain Health		
Heart Failure	All cause Readmission	21.9%	1,144	184	16.08%	121	8	6.61%
		CMS National Avg (Jul 2016 - Jun 2019)	Cases	Events	Rate	Cases	Events	Rate

\*Event rates vary by hospital

## 2024 Comprehensive Heart Failure Treatment – Inpatient and Outpatient Service



**4,676**  
Inpatient Visits



**8,136**  
Outpatient Visits









# Mechanical Circulatory Support

As heart failure progresses, advanced care is needed. This care can include the use of a durable Left Ventricular Assist Device (LVAD) as bridge to transplantation or destination therapy.

## Program Historical Highlights

- First in Utah to implant a left ventricular assist device
- Nation's highest enrolling center in the REMATCH study
- Implanted the first DT HeartMate II in the nation (2004)
- Manage patients with LVADs in up to 9 states
- One of the top centers in the nation for outcomes
- 478 devices implanted including 20 Total Artificial Hearts (TAH)
- 25 patients currently on support as of December 31, 2024

## (LVAD) FREEDOM FROM MORTALITY

Survival	HM3 (n=58)	All Devices (n=274)*
30-Day	96%	96%
1-Year	94%	84%
2-Year	90%	73%
3-Year	90%	68%
4-Year	90%	53%

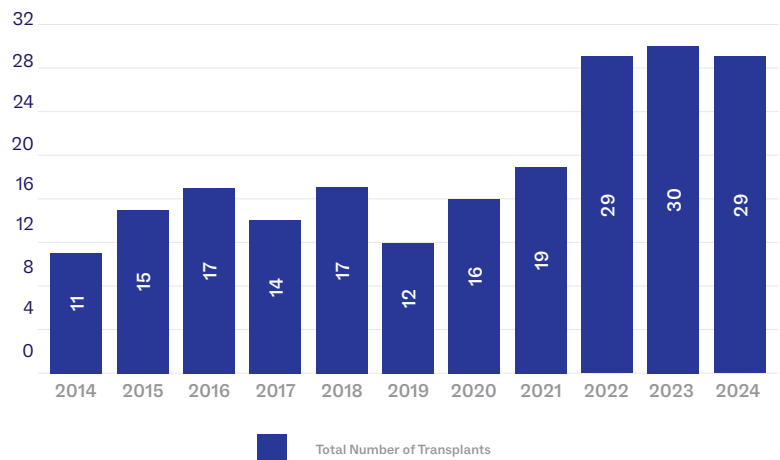
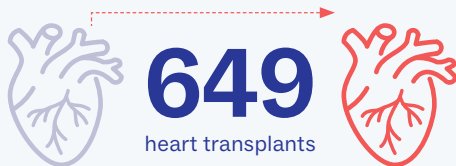
\*All devices column includes the legacy devices HMII, HW, plus the current device HM3.

# Heart Transplantation

Intermountain Medical Center is a designated center of excellence for heart transplantation and has been continuously CMS certified since 1986. Since inception in 1985, our center has performed 649 heart transplantations as of December 31, 2024.

- Partnership with U.T.A.H. Cardiac Transplant Program
- 41% of transplant recipients have been bridged with a VAD or TAH since 2014
- Participation in multiple landmark research trials in the heart transplant field

As of 12/31/2024,  
the transplant program at  
Intermountain Medical Center  
performed:



## SRTR Patient Survival

The Scientific Registry of Transplant Recipients (SRTR) is a national database of transplantation statistics. Based on the SRTR report released to the public on January 7, 2025, the 1-year and 3-year patient survival after heart transplantation was better than expected at Intermountain Medical Center (UTLD).

Figure C23D. Adult (18+) 1-year patient death HR estimate (deceased donor grafts)

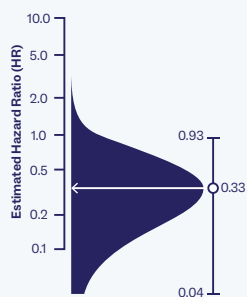


Figure C24D. Adult (18+) 1-year patient death HR program comparison (deceased donor grafts)

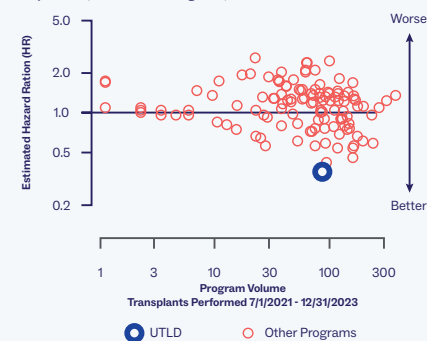


Figure C25D. Adult (18+) 3-year patient death HR estimate (deceased donor grafts)

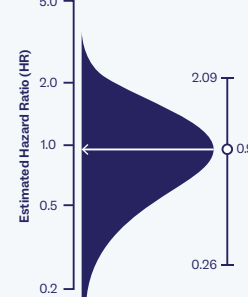
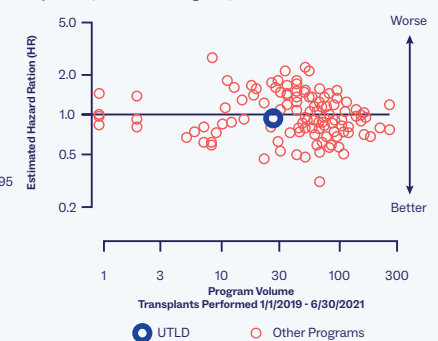


Figure C26D. Adult (18+) 3-year patient death HR program comparison (deceased donor grafts)





# Temporary Mechanical Support

Intermountain Health has been providing various forms of temporary mechanical support for cardiovascular patients since the 1990s. One of the most advanced life support techniques available is ECMO (Extracorporeal Membrane Oxygenation), which is used for patients experiencing acute cardiac and respiratory failure. Our ECMO specialist team, consisting of highly trained registered nurses, manages the device around the clock in collaboration with the bedside nurse.

Intermountain Health's ECMO Program has been designated as an ELSO Gold Center of Excellence, reflecting our exceptional commitment to patient care. By adhering to the highest quality measures, processes, and evidence-based structures, we foster a healing environment for both patients and their families. The achievements of our program demonstrate our steadfast dedication to advancing healthcare at Intermountain Health. Our survival rate to discharge is **7% higher** than the national average.

ECMO Volume Numbers Chart — 2020 through 2024					
Year	2020	2021	2022	2023	2024
Volume	62	46	65	74	72

Modality	Total # of Runs	Survive to Decannulation	Survive to Discharge
VA	48	33 (69%)	26 (54%)
VV	21	17 (79%)	13 (63%)
ECPR	3	2 (67%)	2 (67%)

## Referral Network

Intermountain Medical Center has developed a reputation as a true quaternary medical center with ECMO referrals and transfers coming from multiple organizations across 8 states.







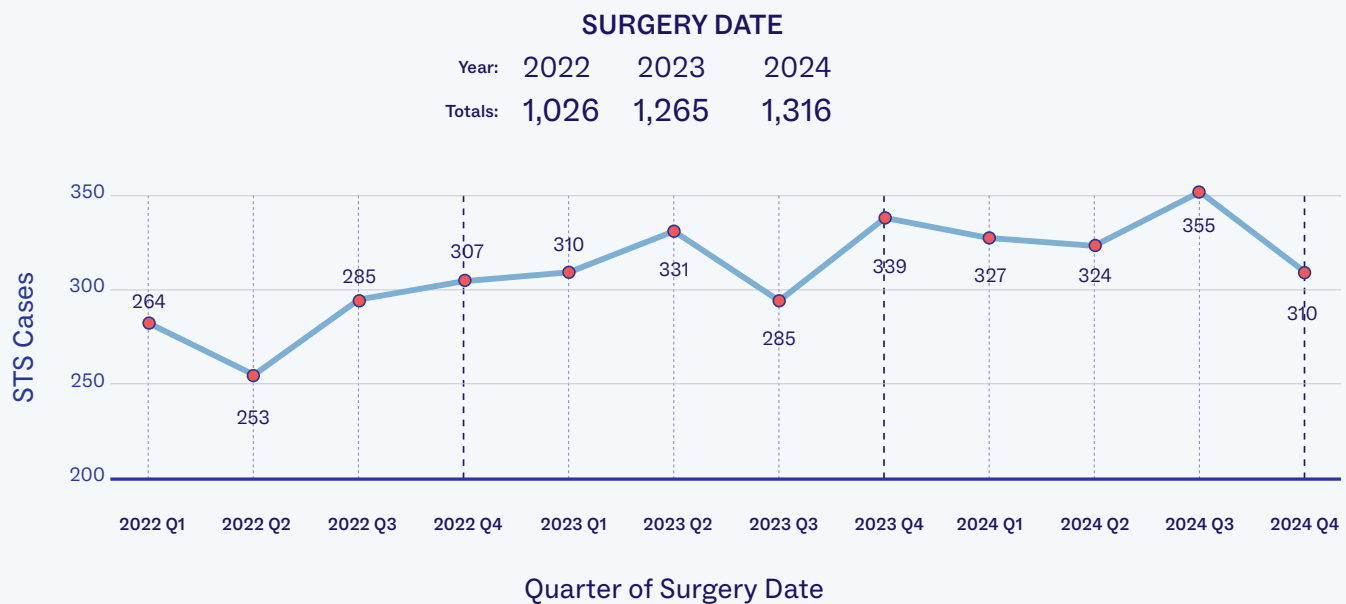


# Cardiovascular Surgery

Cardiac surgical operations are performed in 8 of our 33 facilities. These hospitals serve over a 600,000 square mile demographic area. Procedures include standard, proven operations such as:

- Coronary artery bypass grafting
- Aortic valve replacement
- Mitral valve repair and replacement
- Combined coronary and valve surgery
- Aortic reconstruction
- Maze procedure
- Heart transplantation

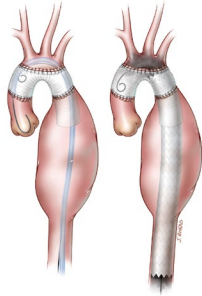
The chart below illustrates STS case volume over time performed by a cohesive team of surgeons across the Intermountain Health system:



# Initiatives in Cardiovascular Surgery

## High-Value Network for Coronary Artery Bypass Grafting

The surgical program recently launched a system-wide effort to provide high quality, affordable heart operations. With a focus on reducing readmission, postoperative ventilation, and surgical costs, all surgeons provide top-tier value for patients requiring isolated coronary artery bypass surgery in alignment with excellent STS outcomes.



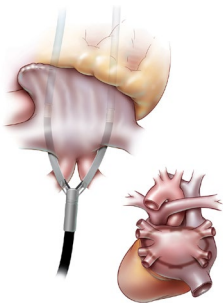
## Advanced Aortic Surgical Care

The Intermountain Aortic Center is a comprehensive, collaborative program including cardiac surgeons, vascular surgeons, intensive care physicians, and cardiologists. Patients with all forms of aortic disease, including aneurysm, dissection, penetrating aortic ulcers, and connective tissue disorders, are evaluated by a multidisciplinary team in order to provide optimal medical treatment, surgical therapies, and endovascular procedures. Advanced care including hybrid open-endovascular aortic arch repair, aortic root reconstruction, and complex re-operative aortic operations are available for both elective and emergency patients.



## Adult Congenital Heart Surgery

As patients with congenital heart disease enter adulthood, some may require new or additional heart operations. The collaborative services of Intermountain Medical Center and Primary Children's Medical Center allows for transcatheter procedures and standard surgical operations to be performed by a specialized team of adult and pediatric surgeons and interventional cardiologists in an individualized manner for each patient.



## Arrhythmia Surgery

Less-invasive technology and surgical techniques are being used to treat patients with atrial arrhythmias and tachycardias. Cardiac surgeons now offer minimally invasive subxiphoid and video-assisted thoracoscopic left atrial ablation and left atrial appendage exclusion for atrial fibrillation. Combined, simultaneous endocardial and epicardial right atrial ablation for inappropriate sinus tachycardia is performed in a hybrid operating suite with surgeons and electrophysiologists.





## Society of Thoracic Surgeons (STS) Star Rating

Our Utah Valley Regional Medical Center and St. George Regional Medical Center programs have overall **2-star rating** for coronary artery bypass surgery.

All of our programs have at least one 2-star rating in one or more areas.

Overall STS rating by hospital



McKay-Dee Hospital

**97.18%**



Intermountain Medical Center

**97.69%**



Utah Valley Hospital

**98.53%**



St. George Regional Hospital

**97.7%**



Saint Joseph Hospital

**98.1%**



Lutheran Hospital

**96.0%**



St. Mary's Regional Hospital

**97.2%**



St. Vincent Regional Hospital

**96.2%**



Combined, all of our cardiovascular surgery programs perform in the top quartile of all STS measures for isolated CABG (coronary artery bypass graft) measures.

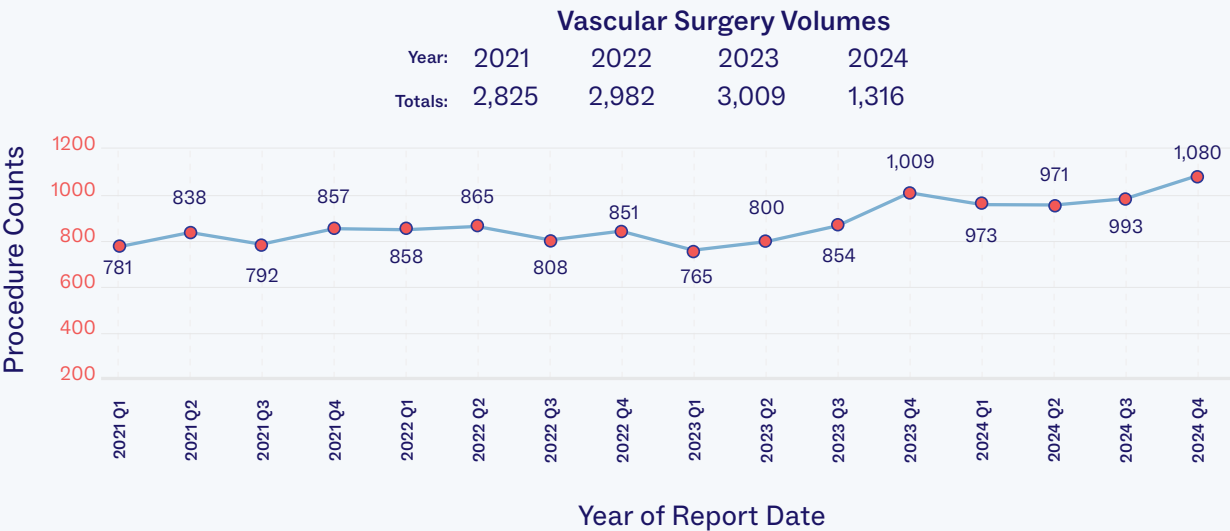


Vascular Surgery is a key partner in the Heart and Vascular Services at Intermountain Healthcare. Vascular Surgeons care for a wide range of diseases of the circulatory system including aneurysm disease, carotid artery disease, lower extremity vascular disease, hemodialysis, and varicose veins, among others. Simply, vascular surgeons care for all disorders of the arteries and veins, excluding intracranial and coronary circulations. Vascular Surgery Service provides a complete range of treatments, from medical management to minimally invasive procedures to major open surgical reconstruction, to help our patients live the healthiest lives possible.

IMED was first in the nation to perform TAMBE (Thoracoabdominal Branch Endoprosthesis) procedure used to treat complex aneurysmal disease with great success.

	IMC	McKay-Dee	SGRH	UVH	Lutheran	St. Joseph	St. Mary's	St. Vincent	Total
CEA	42	37	53	17	19	34	53	36	291
CAS	45	44	39	42	44	31	15	8	268
OAAA	8	1	2	1	–	1	5	–	18
EVAR	26	9	23	21	8	60	31	–	178
TEVAR	51	0	0	1	–	19	–	–	71
IIB	30	11	42	17	15	37	25	–	177
PVI	146	96	188	67	43	49	15	–	604
									1,607

VQI Modules	2023		2024	
	Distinct Encounter	Procedure Counts	Distinct Encounter	Procedure Counts
Arterial angiograms/arterial catheter placements	599	618	685	702
Carotid Artery Stent	103	105	129	131
Carotid Endarterectomy	139	142	169	176
Endo AAA Repair	85	90	95	97
Endovascular Repair	14	14	12	12
Hemodialysis Access	472	478	514	518
Inferior Vena Cava Filter	19	19	20	20
Infra-inguinal Bypass	87	91	81	86
Lower Extremity Amputation	70	92	75	101
Open AAA Repair	23	24	18	19
Open Aneurysm Repair	5	5	11	11
Peripheral Vascular Intervention	472	521	557	611
PVI (Infra Renal only)	1	1	5	5
Supra Inguinal Bypass	32	33	29	31
Thoracic & Complex EVAR	101	103	105	109
Thrombectomy	1	1	6	6
Varicose Vein	1,156	1,166	1,344	1,359
Venous Stent	24	25	27	27
<b>Grand Total</b>	<b>3,021</b>	<b>3,528</b>	<b>3,401</b>	<b>4,021</b>







# Cardiovascular Cath Labs

In 2024, **17,875 patients** received care in a Cardiac Cath-lab procedure and a total of **31,634 procedures** were performed.

Procedure Group	2023		2024	
	Distinct Encounter	Procedure Counts	Distinct Encounter	Procedure Counts
Cardioversion	2,390	1,949	2,665	2,248
CRM	3,170	2,510	3,263	2,650
Diagnostic Cardiac	9,996	9,470	9,919	9,379
EP and Ablation	3,509	2,070	4,239	2,525
EVAR	15	5		
Functional Assessment	2,931	2,387	3,581	2,912
Implantable Cardiac Monitor	9	9	4	4
IVC Filter	5	5	1	1
MCS	116	85	104	82
Neurostimulator	7	7	6	6
PCI	5,271	3,386	5,232	3,364
Peripheral Intervention	3	3	146	36
PV Diagnostic	512	161	498	135
Structural Heart Intervention	1,896	1,712	1,976	1,761
<b>Grand Total</b>	<b>29,830</b>	<b>17,071</b>	<b>31,634</b>	<b>17,875</b>





## STEMI Program

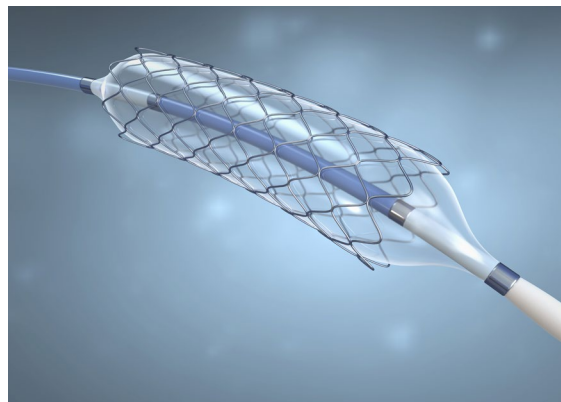
All STEMI programs within Intermountain Health meets or exceeds the  $\leq 90$  minute requirement with the majority meeting  $\leq 75$  minutes. This excludes transferred patients, and patients who received thrombolytics.

Statistics based on the Chest Pain MI registry.



## Angioplasty/Stenting (PCI)

Evidence has demonstrated that optimal medical therapy, in conjunction with those that are appropriate to undergo PCI/stenting, significantly improves morbidity and mortality. Our commitment to this is demonstrated by our performance in the Cath/PCI registry measures detailed below, with **4/4 stars achieved at all locations.**



Hospital	Adherence all recommended medications	Use of P2Y12 adherence	Use of ASA	2024 # of cases
St. Vincent	4-star	4-star	4-star	383
Saint James	4-star	4-star	4-star	163
Saint Mary's	4-star	4-star	4-star	549
Saint Joseph's	4-star	4-star	4-star	214
Lutheran	4-star	4-star	4-star	306
Good Samaritan	4-star	4-star	4-star	151
Platt Valley	4-star	4-star	4-star	121
McKay-Dee	4-star	4-star	4-star	528
Intermountain Medical Center	4-star	4-star	4-star	1,054
Utah Valley	4-star	4-star	4-star	871
St. George	4-star	4-star	4-star	966
Total				5,306







# Electrophysiology (EP)

The Electrophysiology Team works in a collaborative partnership to deliver the best care and treatments to patients who live in rural and urban areas.

## Program highlights:

- Development of the largest program area of conduction system pacing
  - Implanted a variety of devices utilizing conduction system pacing and have developed a high level of expertise in management of this patient population
- Hybrid ablation procedure for treatment of patients with inappropriate sinus tachycardia and postural orthostatic tachycardia
- Stereotactic Radioablation to treat refractory ventricular tachycardia in patients with ischemic cardiomyopathy. This is a collaborative effort with Cardiology, Radiation Oncology, and Advanced Cardiac Imaging.
- Implemented new Ablation technology with Pulse Field Ablation using the most current technology

# Ablation

Procedure Type		2023	2024
AFib Ablation	Cases	1,081	1,324
	Femoral Artery Pseudoaneurysm Rate	0.2%	0.20%
	Vascular Pseudoaneurysm/Fistula Rate	0.3%	0.20%
	Perforation Rate 7-day Post PX	0.4%	0.10%
	Hospital Index Stroke Rate	0.2%	0.10%
	Post Procedure 30-day Stroke Rate	0.3%	0.40%

Supraventricular Tachycardia (SVT) Ablation:

Procedure Type		2022	2023	2024
SVT ablation	Cases	626	606	620
	Femoral Artery Pseudoaneurysm Rate	0.60%	0.00%	0.20%
	Vascular Pseudoaneurysm/Fistula Rate	0.60%	0.00%	0.20%
	Perforation Rate 7-day Post PX	0.00%	0.30%	0.60%
	Hospital Index Stroke Rate	0.00%	0.00%	0.00%
	Post Procedure 30-day Stroke Rate	0.00%	0.00%	0.20%

Ventricular Tachycardia (VT) Ablation:

Procedure Type		2022	2023	2024
PVC/VT ablation	Cases	135	126	113
	Femoral Artery Pseudoaneurysm Rate	0.00%	0.00%	0.00%
	Vascular Pseudoaneurysm/Fistula Rate	0.00%	0.00%	0.00%
	Perforation Rate 7-day Post PX	1.50%	4.00%	0.90%
	Hospital Index Stroke Rate	0.00%	0.00%	0.00%
	Post Procedure 30-day Stroke Rate	1.50%	0.00%	0.90%

Device Implantation

Pacemaker

Procedure Type		2022	2023	2024
PM Implant	Cases	987	1,047	979
	Femoral Artery Pseudoaneurysm Rate	0.20%	0.10%	0.00%
	Vascular Pseudoaneurysm/Fistula Rate	0.20%	0.20%	0.00%
	Perforation Rate 7-day Post PX	0.70%	0.40%	0.30%
	Hospital Index Stroke Rate	0.10%	0.00%	0.20%
	Post Procedure 30-day Stroke Rate	0.20%	0.50%	0.90%

Automatic Implantable Cardioverter Defibrillator (AICD)

Procedure Type		2022	2023	2024
ICD Implant	Cases	370	409	378
	Femoral Artery Pseudoaneurysm Rate	0.00%	0.00%	0.30%
	Vascular Pseudoaneurysm/Fistula Rate	0.00%	0.00%	0.30%
	Perforation Rate 7-day Post PX	0.30%	0.20%	0.30%
	Hospital Index Stroke Rate	0.00%	0.20%	0.00%
	Post Procedure 30-day Stroke Rate	0.50%	0.50%	0.00%



## Electrophysiology Publications to Note:

### 1. Clinical Management of Brugada Syndrome: Commentary From the Experts

Cutler MJ, Eckhardt LL, Kaufman ES, Arbelo E, Behr ER, Brugada P, Cerrone M, Crotti L, deAsmundis C, Gollob MH, Horie M, Huang DT, Krahn AD, London B, Lubitz SA, Mackall JA, Nademanee K, Perez MV, Probst V, Roden DM, Sacher F, Sarquella-Brugada G, Scheinman MM, Shimizu W, Shoemaker B, Sy RW, Watanabe A, Wilde AAM. *Circ Arrhythm Electrophysiol.* 2024 Jan 17(1):e012072. doi: 10.1161/CIRCEP.123.012072. Epub 2023 Dec 15. PMID: 38099441; PMCID: PMC10824563.

### 2. Implantable cardioverter defibrillator use in arrhythmogenic right ventricular cardiomyopathy in North America and Europe

Carrick RT, De Marco C, Gasperetti A, Bosman LP, Gourraud JB, Trancuccio A, Mazzanti A, Murray B, Pendleton C, Tichnell C, Tandri H, Zeppenfeld K, Wilde AAM, Davies B, Seifer C, Roberts JD, Healey JS, MacIntyre C, Alqarawi W, Tadros R, Cutler MJ, Targetti M, Cal. L, Vitali F, Bertini M, Compagnucci P, Casella M, Dello Russo A, Cappelletto C, De Luca A, Stolfo D, Duru F, Jensen HK, Svensson A, Dahlberg P, Hasselberg NE, Di Marco A, Jord. P, Arbelo E, Moreno Weidmann Z, Borowiec K, Delinière A, Biernacka EK, van Tintelen JP, Platonov PG, Olivotto I, Saguner AM, Haugaa KH, Cox M, Tondo C, Merlo M, Krahn AD, Anneline S.J.M. te Riele, Wu KC, Calkins H, James CA, Cadrin-Tourigny J. *Eur Heart J.* 2024 Jan 9:ehad799. doi: 10.1093/eurheartj/ehad799. Epub ahead of print. PMID: 38195003.

### 3. Meta-Analysis of Genome-Wide Association Studies Reveals Genetic Mechanisms of Supraventricular Arrhythmias

Weng LC, Khurshid S, Hall AW, Nauffal V, Morrill VN, Sun YV, Rämö JT, Beer D, Lee S, Nadkarni G, Johnson R, Andreasen L, Clayton A, Pullinger CR, Yoneda ZT, Friedman DJ, Hyman MC, Judy RL, Skanes AC, Orland KM, Jordà P, Treu TM, Oetjens MT, Subbiah R, Hartmann JP, May HT, Kane JP, Issa TZ, Nafissi NA, Leong-Sit P, Dubé MP, Roselli C, Choi SH; FinnGen, Million Veteran Program, Regeneron Genetics Center, Tardif JC, Khan HR, Knight S, Svendsen JH, Walker B, Karlsson Linnér R, Gaziano JM, Tadros R, Fatkin D, Rader DJ, Shah SH, Roden DM, Marcus GM, Loos RJF, Damrauer SM, Haggerty CM, Cho K, Palotie A, Olesen MS, Eckhardt LL, Roberts JD, Cutler MJ, Shoemaker MB, Wilson PWF, Ellinor PT, Lubitz SA. *Circ Genom Precis Med.* 2024 May 28:e004320. doi:10.1161/CIRCGEN.123.004320. Epub ahead of print. PMID: 38804128.







# Cardiovascular Research & Clinical Trials

The Cardiovascular Research group has undergone significant growth over the last few years. We have recruited and activated dozens of new trials with unique and interesting treatment options and added the frontline caregivers and regulatory support to operate them. These efforts have been undertaken in hopes of providing our patients with access to the best that research and medical science has to offer.

Since 2015, the cardiovascular team has published over 640 peer-reviewed manuscripts, which include over 89 in 2024. Our investigators presented 8 abstracts at AHA, 2 at ACC, and 8 at HRS in 2024. Cardiovascular research revenue in CY2024 \$4.35M. Funding sources include federal, foundation, and industry.

## Contributing to Scientific Information through submissions to High-Impact Journals

- › 2 New England Journal of Medicine (1 article and 1 letter to editor)
- › 4 Journal of the American College of Cardiology
- › 2 Circulation
- › 5 Journal of the American College of Cardiology topic specific journals
- › 8 Circulation topic specific journals
- › 5 Nature-related Journals
- › 3 Journal of the American Medical Association (JAMA) Cardiology
- › 2 Cell-related Journals

## Major contributor in multi-center national and international clinical trials including the following high-profile trials:

- › [RECOVER](#) – A national observation study of post-acute sequelae of SARS-CoV-2 infections
- › [ACCLAIM](#) – Randomized, Double-Blind, Placebo-Controlled Study to Investigate the Effect of Lepodisiran on the Reduction of Major Adverse Cardiovascular Events in Adults with Elevated Lipoprotein(a) (Lp(a)) who have Established Atherosclerotic Cardiovascular Disease or Are at Risk for a First Cardiovascular Event
- › [ENTRUST](#) – Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of Pegzofermin in Subjects with Severe Hypertriglyceridemia (SHTG)
- › [ORION-4](#) – A double-blind randomized placebo-controlled trial assessing the effects of inclisiran on clinical outcomes among people with atherosclerotic cardiovascular disease
- › [VICTORION-INCEPTION](#) – An Inclisiran (PCSK-9 inhibitor drug) multi-center randomized trial studying the secondary prevention of ischemic events
- › [VICTORION-PREVENT](#) – A double-blind, placebo-controlled multi-center study to evaluate the effect of inclisiran on preventing major adverse cardiovascular events in high-risk primary prevention patients
- › [TRISCEND II](#) – A global pivotal clinical trial are to evaluate the safety and effectiveness of the Edwards EVOQUE tricuspid valve replacement system with OMT compared to OMT alone in the treatment of patients with at least severe tricuspid regurgitation (TR)
- › [TRILUMINATE](#) – Evaluate cardiovascular outcomes in patient treated with TriClip™ against medical therapy

## New in 2024

- › **FOREST-HCM:** Long-Term Efficacy and Safety of Aficamten in Patients with Symptomatic Obstructive Hypertrophic Cardiomyopathy
- › **Cardioband:** Cardioband FIT device for Transcatheter Tricuspid Valve Repair
- › **TRICAV-I:** A Prospective, Multicenter Clinical Trial of the TricValve Transcatheter Bicaval Valve System in subjects with severe Tricuspid Regurgitation
- › **LEVEL:** A Phase 3, Double-Blind, Randomized, Placebo-Controlled Study of Levosimendan in Pulmonary Hypertension Patients with Heart Failure with Preserved Left Ventricular Ejection Fraction (Ph-HFpEF); **LEVEL:** LEVosimendan to Improve Exercise Limitation in Patients with PH-HFpEF
- › **Together Registry:** A Prospective, Observational post-market Registry Collecting outcomes through a 10-Year post procedure follow-up
- › **ARISE II:** Evaluation of the GORE® Ascending Stent Graft device in the treatment of lesions involving the ascending aorta and aortic arch
- › **ACCLAIM:** Randomized, Double-Blind, Placebo-Controlled Study to Investigate the Effect of Leposdiran on the Reduction of Major Adverse Cardiovascular Events in Adults with Elevated Lipoprotein(a) who have Established Atherosclerotic Cardiovascular Disease or Are at Risk for a First Cardiovascular Event
- › **ENTRUST:** Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of Pegozafermin in Subjects with Severe Hypertriglyceridemia (SHTG)
- › **ST LEUIS II:** Smartphone Twelve-Lead ECG Utility In ST-Elevation Myocardial Infarction II
- › **AVANT GUARD:** A Prospective Randomized Multicenter Global Study Comparing Pulsed Field Ablation Versus Anti-Arrhythmic Drug Therapy as a First Line Treatment for Persistent Atrial Fibrillation.
- › **HighLIFE:** An Early Feasibility Study of the HighLife 28mm Transcatheter Trans-Septal Mitral Valve Replacement System
- › **ACACIA:** A Phase 3, Multi-Center, Randomized, Double-Blind Trial to Evaluate the Efficacy and Safety of Aficamten Compared to Placebo in Adults with Symptomatic Non-Obstructive Hypertrophic Cardiomyopathy

## New Grant Funded studies awarded in 2024

1. Stacey Knight, PhD; The Moana Project: The Connection Between Pacific Islanders and Genetics
2. Ben Horne, PhD/Heidi May, PhD: Impact of Advanced Imaging and Enhanced Risk Profiling on Mitral Valve Prolapse

## Genomic research

HerediGene: Population Study evaluating the genes of 500,000 participants to better predict and prevent serious diseases. CV Research Team is actively analyzing 22,000 genomes from CV repository.

## Publications

A total of **89 papers** were published during 2024. This is up from about 72 in 2023.

- › 19 Structural Heart Disease
- › 14 Heart Failure
- › 10 Precision Medicine
- › 8 Electrophysiology
- › 8 COVID
- › 7 Expert opinion
- › 4 Fasting





## Peaks:

### Research & Innovation

- › The heart surgery and valve programs at Intermountain Health Saint Joseph Hospital consistently achieved the highest ratings designated by the Society of Thoracic Surgeons (STS), including 3-out-of-3 stars in Isolated Coronary Artery Bypass Graft (CABG) and Aortic Valve Replacement (AVR).
- › As a regional leader in cardiovascular care, including top-rated structural heart and cardiothoracic surgery programs, Saint Joseph Hospital was the only hospital in Colorado selected to participate in the MitraClip Repair MR Study, and the only hospital in Denver to participate in the Edwards PASCAL Transcatheter Valve Repair System Pivotal Clinical Trial (CLASP II TR).
- › Additionally, experts at Saint Joseph Hospital performed the first ever commercial Evoque Tricuspid Valve Replacement Procedure in Colorado.

## The Heart Center at Primary Children's Hospital



The Heart Center at Primary Children's Hospital is one of the service lines with the highest clinical volumes. We're the only provider of comprehensive congenital heart disease care to children and young adults within the Mountain West footprint. As a nationally recognized Heart Center program, U.S. News & World Report ranked us 15th in the nation in 2024. Within the Heart Center at Primary Children's, more than 60 highly skilled University of Utah physicians treat the most complex congenital heart conditions. Our clinical team is supported by more than 400 Intermountain Health caregivers, including physician assistants, nurse practitioners, nurses, cardiac sonographers, perfusionists, respiratory therapists, medical assistants, social workers, genetic counselors, Child Life specialists, and more.

## Highlights

**600+**  
Cardiothoracic  
Congenital Heart  
Surgeries

**800+**  
Caths

**200+**  
Electrophysiology  
cases

To read the full  
Primary Children's Hospital  
The Heart Center 2024  
Impact Report, visit:  
[The Heart Center | Children's Health](#)

**650+**  
Cardiac Intensive  
Care Admissions

**70+**  
ECMO

**16K**  
Outpatient Cardiology  
visits in over 8 different  
outreach locations

# 2024 Highlighting Hero's



## In Memory of Benjamin Horne, Ph.D, MStat., MPH

*Cardiac Research*

*"The quality of your question determines the quality of the answer."*

— Benjamin Horne

Ben Horne received his Ph.D in Genetic Epidemiology, M.Stat. in Biostatistics, and MPH in Public Health and Epidemiology from the University of Utah. He worked his entire career with Intermountain beginning in 1996.

He was an Adjunct Professor for the Division of Cardiovascular Medicine at Stanford University. He also held academic positions in Biomedical Informatics and Genetic Epidemiology for the University of Utah School of Medicine. Ben was a fellow of the American Heart Association and American College of Cardiology and a member of the International Genetic Epidemiology Society and American Society of Human Genetics.

Ben was a Guest and Review Editor for multiple journals and served on the Editorial Boards for *Nutrients* and *Circulation: Genomic and Precision Medicine*. He also was a Peer Reviewer for over 100 Journals. Ben dedicated a large amount of his time serving on Scientific Review Committees for grants; abstracts; competitions; data and safety monitoring boards; consortia; and committee memberships and clinical process development.

A large majority of his career was acquiring research grants to learn and communicate information to help better methods of delivering health and health related information. He concentrated his research on the effects of fasting, air pollution and COVID. He was a principal investigator for over 20 studies and a co-investigator for 50 studies. Along with his colleagues, Ben successfully held 6 patent applications for cardiovascular predictive models and risk scores. Contributions in the field of cardiovascular understanding was the focus of Ben's career with over 300 publications in peer reviewed journals. He dedicated his time to prepare over 450 abstracts that were presented at notable cardiovascular conferences. Ben was at the pinnacle of his career and had recently been awarded a prestigious R01 grant from the NIH for mitral valve disease. Ben passed away suddenly in December 2024 and his loss has been devastating to our team, yet his great work will live on forever.

### Active research projects in 2025

Air Pollution Breast Cancer  
RECOVER Data  
Cardiology Databases  
Intermountain Risk Score  
ENCOURAGE  
CVGPS  
Air Pollution and CV/Respiratory Outcomes  
PPCM Exome Study  
FEELGOOD  
WONDERFUL  
AIRHEALTH Study

### BESTMED

*University of Iowa*

Improving Heart Failure Patient Care  
COVID-19 CDM  
The Task Force for Global Health  
Air Pollution Effects on Asthma  
Live Well  
Mitral Valve Prolapse Risk Score  
*National Heart, Lung, and Blood Institute (NHLBI)*  
INSPIRE Fasting Study  
Genetics of Response to COVID-19  
PCORnet BP Control Registry  
*Patient Centered Outcomes Research Institute (PCORI)*

### Closed projects as of 16 Apr 2025

PPCM genetics  
Purple Grape Juice  
Genetic Risks for Matrix Metall. Genes  
Allocure  
AMD & MI  
Genetic Associations w/ MI and phenotypes  
Early Life Conditions  
Melanoma Loci  
Patient Survey Validation



**Emily Bullock, NP**

*Retired*

Emily Bullock is a nurse practitioner who is retiring after 45-years of service to patients with heart failure and heart transplant for Intermountain Health. Emily started her career at Primary Children's Hospital in 1979 as a registered nurse. In this role she wore many 'hats' to help get their new pediatric heart program started: she saw patients, coordinated the details of transplants, provided education/support/triage to her patients and their families and collected regulatory data for the transplant program. In this role, she did many presentations at scientific meetings and contributed to numerous publications on heart transplantation. Emily developed and maintained close relationships with her patients and their parents as they experienced life-changing and life-threatening illness with the promise of heart transplant for many.

Emily decided to pursue her advanced practice degree in nursing to become a nurse practitioner in 2013. With the change in her role, she moved to the adult Heart Failure & Transplant Program at Intermountain Medical Center. In her 11 years as an advanced practice provider in the adult transplant program in Salt Lake City, she helped transition pediatric patients to the adult program as they became of age and had a dedicated patient panel of patients who have relied on her care and expertise. Emily is an example of the consummate caring clinician who has gone above and beyond for her patients, who love her, who has been a strong team-player and has always looked after the good of the program. The adult and pediatric transplant programs thank Emily for her years of dedication and excellence in patient care and wish her the best in her retirement.



**Thomas Desmarais, MD**

*Vascular Surgery — Intermountain Health Heart & Vascular Billings, MT*

Dr. Thomas Desmarais serves as the current Medical Director of Vascular Surgery at St. Vincent Regional Hospital in Billings, Montana. He is committed to a patient-centered, evidence-based philosophy of care, striving to provide the same level of service he would expect for his own family members.

Dr. Desmarais values meaningful interactions with his patients, whether in the clinic or operating room, and focuses on improving symptoms and preventing complications of vascular disease. His dedication extends beyond Billings, as he works diligently to provide care to patients across Montana and northern Wyoming. His example of dedication and commitment to his patients and community is a testament of his character and dedication we admire at Intermountain Health.



**Carlos Albrecht, MD**

*Cardiology — Intermountain Health Heart & Vascular Butte, MT*

Dr. Carlos Albrecht has an impressive medical journey that spans Peru, Japan, and the United States. After earning his Doctor of Medicine from the Universidad Nacional Federico Villarreal in Peru, he completed a fellowship in Cardiac Electrophysiology in Japan and an Internal Medicine Residency in Chicago. He also completed a Preventive Cardiology Fellowship at Harvard Medical School/VAMC/Brigham and Women's Hospital in Boston during 1999-2000.

Dr. Albrecht is dedicated to all aspects of invasive cardiology and is passionate about patient care. On an annual basis he procures and donates pacemakers and ICDs to indigent patients in Lima, Peru, reflecting his profound commitment to global health. With a philosophy of treating all patients as if they were his own family. Dr. Albrecht is passionate about expanding services and building on St. James' legacy of providing high quality heart care to patients across southwest Montana.



**Lauren Zobec RN & Sarah Duarte RN**

*Saint Joseph Hospital in Denver Colorado*

Lauren Zobec and Sarah Duarte are bedside caregivers on the Cardiac & Vascular Care Unit at Saint Joseph Hospital. They noticed a trend of post open heart surgery women being readmitted for pressure injuries and sternal dehiscence. This was occurring with women with larger breasts, as they experience additional strain on the incision. These women reported they were not wearing the post-surgical bra given to them, because it was uncomfortable, scratchy, and difficult to put on. There were also women who attempted to be compliant with the bra, but the fit was not right, so pressure injuries developed from constriction.

Lauren and Sarah conducted a literature search and found a hospital in the UK with a similar wound trend. This hospital created their own bras which were soft, breathable, moisture wicking, and available in a wide range of sizes. Lauren and Sarah found a comparable bra made in the US, which was originally designed for mastectomy patients.

The new bra was stocked, and a process was created for sizing in pre-op with education on importance of breast support for 6-weeks post operatively. Since implementation of this Quality Improvement Project, additional wounds have been eliminated for women. The yearly wound rate went from **6.4% to 0%**.





In the year prior, the seven women who experienced wounds had an additional 274 additional hospital days and \$751,000 in costs. With greater use and bulk pricing, the new bra is estimated to save \$12,000 a year enterprise wide in supply costs.

Lauren and Sarah are passionate about helping women by providing them with a soft, comfortable, and supportive post-surgical bra, that they want to wear and own. We are extremely proud of our great bedside staff like Lauren and Sarah who put the patient first and make a difference.



**Tej Singh, MD**

*Vascular Surgeon — Grand Junction CO*

St. Mary's Regional Hospital has had a long-standing history of providing vascular care to an area of a 250-mile radius around Grand Junction, Colorado, which is located in Western Colorado. In 2023, with the successful recruitment of a full-time vascular medical director Dr. Singh, the program continued to expand in Grand Junction, Colorado. This program under the direction of Dr. Singh, provides all aspects of vascular surgery care with an effective and efficient vascular surgical clinic.

In the fall of 2024, the Grand Junction based St. Mary's Regional Hospital was awarded Vascular Verification status by the American College of Surgeons and the Society for Vascular Surgery. St. Mary's was the first community hospital in America to reach this highest standard of patient, safety, quality, education and facilities. With this recognition, the Grand Junction vascular surgeon program continues to expand and grow in visits and procedures. It continues to provide the highest quality vascular surgery care in Western Colorado and serves as a centerpiece for the Peaks region's vascular Programs. This is due to the great work of Dr. Singh. He is a great example of giving the best care to not only our patients but our community.



**David Boorman, MD**

*Operations Senior Director – Desert Region, SW-UT*

Dr. David Boorman is an invasive cardiologist/interventionalist at St. George Regional Hospital. Dave pioneered coronary intervention at this site, completing the very first stent in Southern Utah. He has had a long and prosperous career, specializing in coronary intervention, with Heart of Dixie Cardiology, starting in Salt Lake City. In the 1990's when Dr. Mary Ann McDonnell was the only (noninvasive) cardiologist in St. George, Dr. Boorman would travel down to St. George to perform coronary angiograms for her patients, relieving patients of the inconvenience of traveling to Salt Lake City to obtain an angiogram. He was in a practice, The Heart Center, with 13 cardiologists covering 4 different hospitals in Salt Lake City at the time.

In 2001, he moved his practice to St. George, joining Dr. Gregory Price at Heart of Dixie Cardiology. He left the Heart of Dixie in 2024, and joined Southwest Cardiology, and now has his "dream job", performing angiograms and interventions at the hospital, helping to provide coverage for the interventionalists there. His favorite place to be is in the cath lab when he isn't hosting Halloween and scorpion parties!

He is an exceptional clinician, with an excellent sense of humor and interpersonal skills. His patients, especially, appreciate his humor and mindfulness. He is very thorough in his approach to medical care and pays close attention to details. His patients almost universally love working with him, as he treats every patient as an individual, and takes time to listen to their concerns. He also is quite humorous and can joke freely with patients. I have heard many patients mention the music he plays in the cath lab, and his singing along with it, lightening their anxiety. I have also heard many patients advise “don’t give up your day job!” We are very fortunate to have Dr. Boorman join our team here at Intermountain Health, providing excellent care to the patients in the cath lab.



**Billy Oslund, MD**

*Cardiac Surgeon — Intermountain Medical Center, Murray, Utah*

Billy Oslund is excited to have joined the Intermountain cardiovascular surgery team in July 2024. Billy is a Utah native and is happy to be back after over a decade away. Billy was raised in Sandy and attended Brigham Young University where he graduated with a degree in accounting. He became a CPA while working as an auditor for Deloitte & Touche in Houston, Texas. Billy always loved science and had a change of heart while at Deloitte. He returned to school to complete the pre-requisites for medical school. He attended the University of North Carolina at Chapel Hill School of Medicine and afterwards completed his integrated Cardiothoracic Surgery training at the University of Southern California in Los Angeles.

While at USC, Billy received excellent training in all facets of cardiac surgery but had significant training in the fields of complex aortic surgery and congenital heart surgery, including adult congenital heart disease. These are his main fields of interest. He also has an interest in research and looks forward to supporting Intermountain’s cardiovascular research efforts in order to improve patient outcomes. More than anything, Billy loves taking care of patients. He’s grateful for the opportunity to serve them and address their surgical cardiovascular needs. He has loved being at Intermountain and is so grateful for the incredible people that he gets to work with every day and we are more than grateful he is working with us to better our community.



**Kendra Smith, RN**

*Abstraction Partner Clinical Senior*

Kendra started working for Intermountain Health in June 1999 as a CNA at Dixie Regional Medical Center. She graduated with a registered nursing degree in 2002 and worked in Central Staffing. Because of her energy and willingness to do something impactful, she advanced her knowledge by learning specialized areas of patient care. She got the opportunity to work in the Cardiac Cath Lab and fell in love instantly. As she advanced her learning she worked in the Cardiac Cath lab from 2003-2013 when she started abstracting vascular data for Dr. Khoury.

Kendra received a master’s in science of nursing (MSN) in 2009 and began abstracting for CathPCI in 2018 and also abstract LAAO cases. She was asked to be the Rocky Mountain Regional Manager for VQI in July 2023. Intermountain has been dedicated to expanding and improving vascular care and we have made great strides in the last few years. We now have Vascular AMDs for Peaks, Canyons, and Desert regions. Dr. Galt, Vascular Surgery AMD has been a huge part of improving the quality and

accuracy of the data that is inputted. He meets with the abstractors weekly to review any questions they have. One of Kendra's favorite parts of her job is to access long term follow up on the vascular patients. Legacy Intermountain Health hospitals rank #1, 2, 3, and 4 for the highest follow-up numbers for the Rocky Mountain region.

In addition to her great work for Intermountain Health, she also volunteers for two different animal rescues, Jackson Day Animal Rescue and Texas Animal Society. This demonstrates how she helps her community as well as her patients. We only get better at caring for others and serving our communities by having great clinicians like Kendra.



**Meghan Fitzgibbons, RN**

*Practice Director, Medial Group, Desert Region*

Meghan is originally from Boston, MA and has a is part of the Intermountain Health medical group in Las Vegas, NV. She has led many changes for this medical group related to cardiovascular care, growth of services provided, and patient management. Her medical group is a tight knit team working together in support of several surrounding hospitals in Las Vegas providing cardiovascular services and she is part of their leadership during great change. Meghan leads a group of highly trained staff with different skill sets in a standalone practice not associated directly with a hospital but provide services to several surrounding facilities.

She is a leader and innovator for Intermountain Health by implementing great ideas to help serve patients and her community. One of her many projects was to open a diuresis clinic to help reduce re-admission of heart failure patients they serve. This has been a wildly successful option for our patients by helping them get the best cardiac care possible at the lowest cost. She has been heavily involved in delivering cardiac care in an Ambulatory Surgery Center (ASC) that provides same-day treatments that would otherwise be hospital based. This helps lower costs by reducing hospital expenses and improves patient satisfaction by providing efficient, advanced cardiac care. Meghan is a great member of our team and we are so grateful for her hard work and caring for patients and her team.



**Lydia Dong**

*Data Analyst-Statistician*

Lydia Dong joined Intermountain Health in 2010 after six years of experience at two other healthcare organizations. Originally from Beijing, China, she earned her medical degree from Beijing Medical University before moving to the U.S., where she obtained a master's degree in mathematics and statistics from Mississippi State University.

As a data professional, Lydia is passionate about transforming data into actionable insights. She integrates her clinical, statistical, and research expertise to develop holistic solutions that drive healthcare improvements. As an analytic lead, she collaborates with executives, clinicians, researchers, and data developers to bridge clinical, operational, and technical domains.



With extensive experience in cardiovascular data and registries, Lydia has led the development of comprehensive dashboards and physician tiering models for CV sub-specialties. She also works closely with data abstractors and architects to enhance CV registry databases within Intermountain Health's Enterprise Data Warehouse, ensuring high-quality data management and meaningful analytics to support clinical decision-making. Her role is critical for Cardiovascular Clinical Program to demonstrate improvement and advancement of care provided.



**John H. Mitchell, MD**

*Medical Director of Cardiothoracic Surgery Utah Valley Hospital, Canyons Region*

Dr. John H. Mitchell, Medical Director of Cardiothoracic Surgery at Utah Valley Hospital for over 20-years and has energy and excitement everyday to help people live the healthiest lives possible, through a remarkable Utah Valley Hospital team caring for our community. A graduate of the Uniformed Services University of the Health Sciences (1987), he completed General Surgery training at Walter Reed Army Medical Center (1993), then specialized in Cardiothoracic Surgery at the University of Louisville (1997). After 20-years in the US Army as a physician and heart surgeon (most recently retired as Colonel in the US Army Reserve), Dr. Mitchell transitioned to civilian practice in 2003.

He has dedicated vigorous effort in advancing heart and lung care at Intermountain Health Utah Valley Hospital. Dr. Mitchell works alongside three other exceptional cardiothoracic surgeons (Drs. Dane, McCann, Aziken), five advanced practice providers (APP), and a UVH Team in the OR, patient care units, cardiac rehabilitation, and Intermountain Health administration. Everyone is instrumental in the development and growth of our heart and lung programs. We have expanded access into advanced valve management therapies, multi-arterial coronary grafting, and robotic chest and lung operations. Our Team is committed to highest quality patient care at an affordable cost. Dr. Mitchell expresses: "It is an honor to be a part of this team of dedicated and collaborative people crucial to providing exceptional patient care in our community." We are honored to have him as part of our team.



**Bonnie Clay, NP**

*Retired*

Bonnie Clay's journey at Primary Children's Hospital (PCH) began in 1994, marking the start of a remarkable career dedicated to pediatric cardiac care. Over the years, Bonnie has been an integral part of the hospital's growth and success, contributing significantly to the Pediatric Cardiovascular Services. Her dedication to her patients and her unwavering commitment to excellence have made her a beloved figure at Primary Children's Hospital.

Bonnie's career in nursing began in 1978, and she brought a wealth of experience and knowledge to PCH when she joined the team. Her passion for cardiac care was evident from the start, and she quickly became a key player in the hospital's cardiac program.

Throughout her career, Bonnie has worked with a wonderful group of surgeons, cardiologists, intensivists, APPs, perfusionists, bedside nurses, and support staff. She learned from some of the best in the field and has passed on her knowledge to many APPs she has oriented and worked with over the years. Her contributions have been invaluable, and her impact on the hospital and its patients is immeasurable.

Bonnie's commitment to her patients and her colleagues has been unwavering. She has always put the needs of her patients first and has worked tirelessly to ensure they receive the best care possible. Her dedication to her work and her passion for cardiac care have made her a role model for many in the field. Bonnie has also been a source of support and inspiration for her colleagues. Her positive attitude, sense of humor, and willingness to help others have made her a beloved member of the PCH family.

Bonnie, thank you for your years of dedicated service to Primary Children's Hospital. Your contributions have made a lasting impact, and you will be greatly missed. We wish you all the best in your retirement and hope you enjoy this new chapter in your life.



**Blake I. Gardner, MD**

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