



Changing Practice Changing Lives

Heart Report 2013



Duke Heart Report 2013

A top 10 program for the past 20 years

Duke Heart Center is among the world's leading heart centers. Dedicated to advancing cardiovascular research and practice, our goal is to provide the highest quality heart care and improve the lives of patients across the nation and around the globe.

Our commitment is evident from our involvement in all phases of research, from discovering new pathways to testing new therapies and defining appropriate use. As a result, our faculty works with national organizations to help set the standard of care for all heart disease patients. Through these efforts we are changing practice – and changing lives. Join us.



Christopher O'Connor, MD
Director, Duke Heart Center



Peter K. Smith, MD
Chief, Cardiovascular and Thoracic Surgery



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Advanced Coronary & Vascular Disease Program

Duke cardiothoracic surgeons have earned a 3-star rating from the Society of Thoracic Surgeons, placing them among the nation's top performing adult cardiac surgery programs.

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Helping aortic dissection patients win in the race against time

As a national leader in the surgical management of acute thoracic aortic aneurysms (AAD), Duke is working to expand its acclaimed Regional Approach to Cardiovascular Emergencies (RACE) program to lay the groundwork for a regional AAD care network in North Carolina.

Duke first implemented the RACE protocols in 2003 to improve survival in heart attack patients throughout North Carolina. The protocols work by training paramedics to do the work of the emergency room physicians, and training ER physicians to do the work of cardiologists, which allows for faster administration of reperfusion therapy when the patient arrives.

Duke has seen impressive results since implementing the RACE protocols. The time from “door to balloon” for patients at Duke University Hospital has decreased between 42 and 60 minutes depending on whether the patient arrives via EMS or transfer. Between 80 and 100 percent of heart attack patients at Duke receive reperfusion treatment within 90 minutes of arrival.

Similarly, the AAD care network would facilitate the prompt transfer of AAD patients from smaller, less well-equipped hospitals to tertiary care hospitals that perform high-volume AAD procedures to ensure optimal patient outcomes.

Exceeding benchmarks for thoracic aortic surgery outcomes

Duke is internationally recognized for its exceptional patient outcomes, which equal or exceed other centers’ published results for all types of aortic surgery. A high-volume service, our program is among the nation’s largest for open aortic surgeries and deep hypothermic circulatory arrest for aortic-arch aneurysms.

Duke is a leader in valve-sparing aortic-root replacement and “hybrid” aortic-arch and thoracoabdominal procedures, which our surgeons helped to develop. We are one of the only U.S. centers using online central nervous system monitoring with EEG and evoked potentials to protect the CNS during aortic repair.

Duke participates in virtually all major thoracic endovascular stent graft-related clinical trials, and is among the country’s leading centers in implementing new techniques and technologies.

Recognized for exceptional CABG results

Duke cardiac surgeons consistently produce exceptional patient outcomes with survival rates significantly higher than those expected in its complex patient population. Our team has earned the highest quality rating (3 stars) from the Society of Thoracic Surgeons and our annual volumes consistently exceed those recommended by the AHA and ACC as indicators of care quality.

Duke is a national leader in arterial grafting, which prolongs patients’ lives. Ninety-seven percent of Duke patients who have blockages of the left anterior

descending coronary artery undergo arterial grafting. Other grafts are typically harvested via minimally invasive endoscopy.

Advancing innovative surgical techniques

Duke cardiologists and cardiothoracic surgeons collaborate to perform about 20 hybrid revascularizations annually. This procedure consists of a minimally invasive arterial bypass graft, combined with minimally invasive balloon stenting of the other blockages. Based on the results of an NHLBI-funded, observational study of this transformative technique, a pivotal comparative effectiveness trial is being planned at Duke and other leading hospitals.

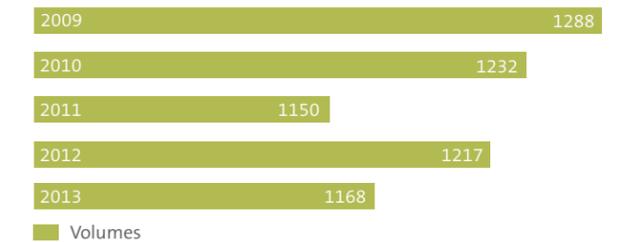
Resistant hypertension: treatment options for the most difficult-to-treat

Duke deploys a multidisciplinary team of cardiologists, nephrologists, internal medicine physicians, and research coordinators to assist in the management of patients with resistant hypertension.

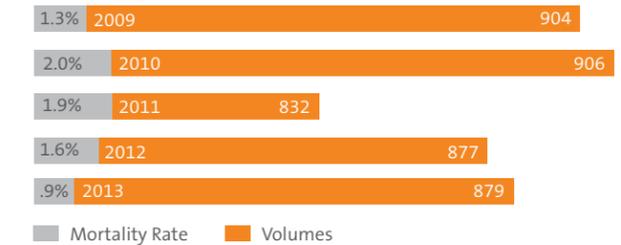
Our team was one of the top five enrolling sites in the Symplicity HTN-3 study and enrolled the first patient in Symplicity HTN-4.

Duke participated in the AHA-funded SPRITE program and the Check It-Change It program, in which patients received home-based monitoring. Duke is also involved nationally in continuing medical education programs to develop resistant hypertension programs through which patients will receive both web-based and physician/nurse-delivered education.

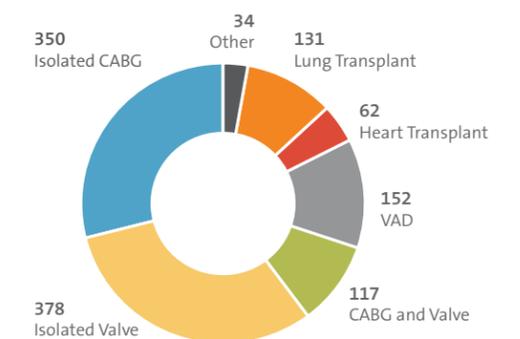
DIAGNOSTIC/INTERVENTIONAL CATHETERIZATIONS
Duke University Health System, FY
Duke performed a total of 7106 cardiac catheterizations during the 12-month period ending June 2013.



CARDIAC SURGERY VOLUMES AND MORTALITY
Duke University Hospital, FY



CARDIAC SURGERY VOLUMES BY PROCEDURE
Duke University Hospital, FY 2013



Peter K. Smith, MD
Chief, Cardiovascular
and Thoracic Surgery

Jeffrey G. Gaca, MD
Surgeon, Duke Heart Center

Manesh R. Patel, MD
Medical Director, Percutaneous
Interventions (PCI)

E. Magnus Ohman, MD
Medical Director, Advanced
Coronary Disease

Advanced Heart Failure Program

30-day readmissions at Duke University Hospital have decreased 15% over the past year.



Same-day access clinic contributes to drop in readmissions

In September 2012, Duke Heart Center opened the Heart Failure Same-Day Access Clinic, an outpatient service that aims to enable patient-driven care and reduce hospital readmissions. The clinic provides patients who have heart failure symptoms with easy access to IV medicines, infusions and other treatments that have been traditionally unavailable outside the inpatient setting. The clinic is staffed five days a week by a doctor and two nurse practitioners and generally sees three types of patients: 1) those who need early follow-up after

hospital discharge, 2) those requiring intensive disease management, and 3) those experiencing new heart failure symptoms. The program employs an evidence-based approach to heart failure care—grounded in research conducted by Duke and others—that emphasizes care coordination, early follow-up treatment, and aggressive symptom and medication management. Working in concert with other Duke Heart Center initiatives, the Heart Failure Same-Day Access clinic has played a significant role in improving quality and resource utilization, as evident by the 15% decrease in Duke University Hospital's 30-day readmissions this past year.

Options for those with advanced disease

Duke's Ventricular Assist Device (VAD) Program specializes in the implantation of right and left ventricular devices for children and adults. In addition to offering the latest types of VAD support, Duke is the leading enroller in trials investigating the use of Impella RP Support System in patients with right heart failure and the use of Heartware HVAD as destination therapy. For those seeking new left ventricular devices (LVADs), Duke also offers a minimally invasive replacement procedure.

VAD Training Program

The Duke Heart Center's Mechanical Circulatory Support Program is actively engaged in providing educational opportunities for physicians and surgeons, as well as assisting hospitals that wish to organize and initiate their own VAD programs. Our program, which is taught by our highly-experienced team, includes didactic lectures, hands-on experience in the operating room, opportunities to participate in both inpatient and outpatient clinical care, and help managing the administrative aspects of VAD therapy.

A leader in adult and pediatric heart and combined transplants

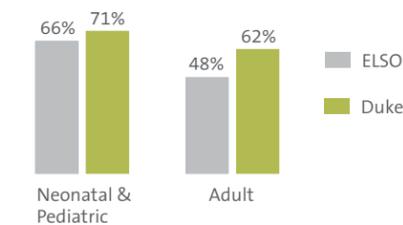
Duke's Heart Transplant Program is among the nation's best, with one-year survival rates that consistently surpass the national average. In addition to offering standard transplants, Duke offers extended criteria transplants for those who have been turned down for the procedure

elsewhere, and performs more pediatric heart transplants than any other center in North Carolina. Duke surgeons have successfully performed countless combined transplants, including heart-lung, heart-kidney, heart-liver, and heart-lung-liver.

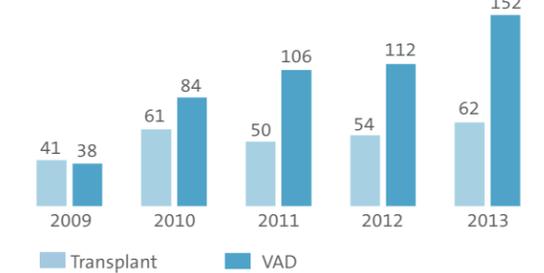
An ECMO Center of Excellence

Duke's ECMO Program received the 2013 Excellence in Life Support Award from the Extracorporeal Life Support Organization (ELSO), an international consortium of centers that offer ECMO support to infants, children, and adults with failing organ systems. The award—which ranks among the highest for ECMO programs—designates Duke as an ELSO "Center of Excellence" dedicated to achieving high quality standards, using specialized equipment and supplies, following defined patient protocols, and providing advanced education to ECMO staff.

ECMO SURVIVAL-TO-DISCHARGE RATE
Duke University Health System, 2008-2012



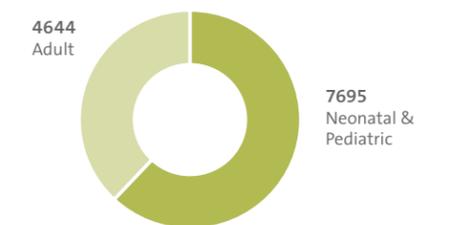
VAD AND HEART TRANSPLANT VOLUMES
Duke University Health System, FY



ONE-YEAR HEART TRANSPLANT PATIENT SURVIVAL RATE



ECMO TEAM SUPPORT
Duke's ECMO team provided a total of 12,339 hours of support during 2012.



G. Michael Felker, MD, MHS
Chief, Heart Failure Section

Carmelo A. Milano, MD
Surgical Director,
Cardiac Transplant

Adrian F. Hernandez, MD, MHS
Director, Outcomes Research

Joseph G. Rogers, MD
Medical Director,
Cardiac Transplant

Congenital & Structural Heart Disease Program

To date, Duke has successfully treated more than 230 patients with TAVR therapy.



Pioneering treatment options for heart valve patients

Combining the talents of the divisions of interventional cardiology, cardiothoracic surgery, radiology, and cardiac anesthesia, Duke has provided successful transcatheter aortic valve replacement (TAVR) to more than 230 patients to date.

Duke was a national enrollment leader in the U.S. evaluation of the CoreValve prosthesis. Data from this trial have shown lower perioperative stroke risk compared with previously reported TAVR studies, and Duke faculty are co-authors of this work being published in the New England Journal of Medicine.

Duke served as the Clinical Events Committee and the Echocardiographic Core Laboratory for the historic

evaluation of the Sapien balloon expandable TAVR device, leading to its clinical approval in the United States.

Duke faculty coauthored the 2012 ACCF/AATS/SCAI/STS Expert Consensus Document on Transcatheter Aortic Valve Replacement, and the Duke Clinical Research Institute houses the STS/ACC TVT Registry, a national benchmarking tool to monitor patient safety and outcomes for the clinical use of TAVR.

Duke is currently involved in SURTAVI to evaluate the CoreValve self-expanding stent valve prosthesis in lower-risk patients with aortic valve stenosis. In 2014 Duke will evaluate the second generation of TAVR devices, the Portico and Lotus systems, which hold the promise of better outcomes for our patients.



World leader in minithoracotomy mitral valve surgery

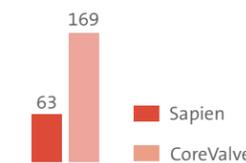
Duke surgeons have performed nearly 6,300 mitral valve procedures since 1962 (when the first commercial mitral valve procedure was performed) — experience that consistently produces mortality rates that rank among the lowest reported.

Duke has the world's highest volumes (more than 1,700) of minithoracotomy mitral procedures without femoral arterial cannulation. We have the largest reported experience in the U.S. of repeat mitral surgery (about 350) and tricuspid surgery (about 300) as minithoracotomy. And, with more than 650 minithoracotomy aortic valve replacements, we rank in the nation's top two volume leaders.

Duke is one of about 40 sites nationally with access to MitraClip, a device (approved by the FDA in October 2013) inserted into the mitral valve to prevent mitral valve regurgitation. Duke also is participating in an ongoing MitraClip clinical trial.

Duke has performed robotic cardiac surgery since 2002, particularly for mitral valve repair and replacement.

TAVR VOLUMES
Duke University Hospital, 2011 - 2013



Exceptional survival rates for congenital heart patients

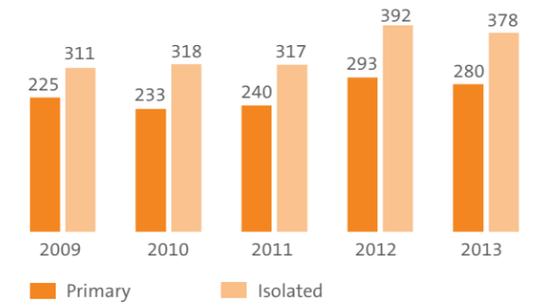
With a mortality rate of less than 2 percent, Duke's Pediatric and Congenital Cardiovascular Surgery Program continues to produce outcomes that meet or exceed Society of Thoracic Surgeons benchmarks — even in patients with the most complex malformations.

Duke has North Carolina's largest pediatric heart-transplant program and is one of only eight U.S. centers in the prestigious NIH-funded Pediatric Heart Network (PHN), a clinical research program aimed at improving the lives of children with congenital and acquired heart disease.

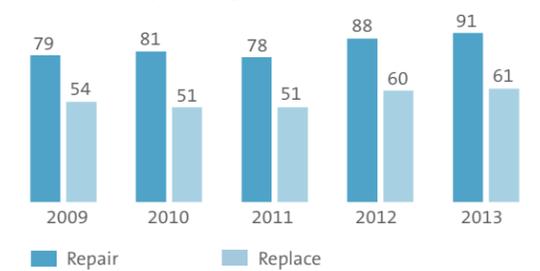
At a time when there are more adults than children with congenital heart disease, Duke provides a continuum of highly effective care across the age spectrum by leveraging the advantages that come from locating a children's hospital within a leading adult heart center staffed by world-class thought-leaders.

Duke's Adult Congenital Heart Disease Program is one of the major centers in the U.S. dedicated to evaluating and managing adults with congenital heart disease, a complex, growing population that comprises some one million Americans.

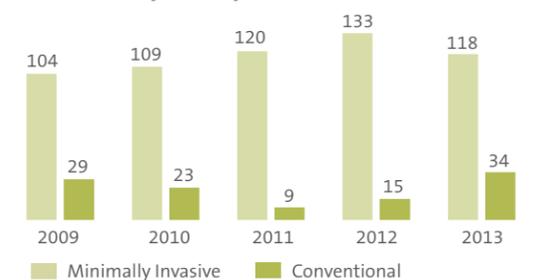
PRIMARY AND ISOLATED VALVE SURGERY VOLUMES
Duke University Health System, FY



ISOLATED MITRAL VALVE REPAIR AND REPLACEMENT VOLUMES
Duke University Health System, FY



CONVENTIONAL VS. MINIMALLY INVASIVE MITRAL VALVE SURGERY VOLUMES
Duke University Health System, FY



Electrophysiology Program

14 electrophysiologists utilize 4 different mapping systems in 4 EP labs and 2 hybrid ORs to treat over 1700 patients each year.



Treatment options backed by research

Duke's team of electrophysiologists is actively involved in clinical trials research – evaluating new treatment approaches and advancing arrhythmia care for patients throughout the Southeast.

We are involved in several studies exploring novel catheters to increase the efficiency of atrial fibrillation ablation, such as using laser energy, using multiple simultaneous electrodes during radiofrequency ablations, measuring the contact force applied to the heart during mapping, and using computerized mapping systems to detect the underlying organization of the arrhythmia (FIRM mapping).

Other active protocols include:

Sponsored by NIH, **CABANA** is the largest trial studying the effectiveness of catheter ablation for reducing the risk of stroke, heart failure and death related to atrial fibrillation.

Duke Heart Center is the leading enrolling center in North America.

Intra-Opt, a Duke-initiated investigation, evaluates patients with electrical conduction delay between the right and left atria to optimize cardiac resynchronization therapy and reduce the chance of non-response.

Data shows that patients with right bundle branch block have a lower response rate to cardiac resynchronization therapy. **PACE-RBBB**, initiated by Duke investigators, compares three different pacing modalities in low ejection fraction heart failure patients with RBBB.

NANOSTIM is evaluating a novel implantable device that allows the heart to be stimulated without a wire, thus avoiding complications that can arise from leads. The device can be implanted minimally invasively without conventional surgery.

Exploring novel atrial fibrillation therapies

Duke's Center for Atrial Fibrillation is a comprehensive, multidisciplinary program evaluating and treating patients with atrial fibrillation using medical management, catheter ablation, surgical ablation and comprehensive follow-up. We continually evaluate new treatment approaches aimed at improving the efficiency and efficacy of ablation procedures. We use the latest mapping systems available to help identify the source of the arrhythmia, such as rotors or reentrant circuits, to improve treatment precision and reduce the need for repeat ablations. Fewer than ten percent of patients need a repeat ablation within the first two years.

Lead management and extraction, without the need for open surgery

We have the busiest implantable device cardiac lead extraction program in the Southeast, and accept referrals for patients who have had failed extraction procedures. Extractions are done in a hybrid operating room with active participation of a cardiothoracic surgeon – yet 95% of extractions are successfully completed without the need for open surgery. Research is under way looking at the tensile strength of leads and ease of extractability of different left ventricular leads.

Specialized programs address distinct patient needs

Duke's EP faculty are experienced in a broad range of conditions. Four adult arrhythmia experts work in concert with pediatric specialists and a dedicated cardiovascular genetic counselor to diagnose and manage patients with inherited heart rhythm disorders at risk of sudden cardiac death. Our cardiac resynchronization team combines pre-procedure imaging (MRI and echo) and implantation expertise to work with patients failing to achieve desired response. And, most recently, we developed a syncope and autonomic program to evaluate patients admitted acutely and those with recurrent episodes or conditions such as postural orthostatic tachycardia syndrome.

PROCEDURE VOLUMES FY, 2013

1710
Total EP Procedures

637
Ablations

450
Pacemakers

440
ICDs

58
Lead Repair/Extractions



James P. Daubert, MD
Chief, Cardiac
Electrophysiology

Brett D. Atwater, MD
Electrophysiologist,
Duke Heart Center

Camille G. Frazier-Mills,
MD, MHS
Electrophysiologist,
Duke Heart Center

Kevin P. Jackson, MD
Electrophysiologist,
Duke Heart Center

Redesigning Care for Improved Outcomes



The Centers for Medicare and Medicaid Innovations (CMMI), a division of Medicare, has selected Duke as an initial participant in its Bundled Payments for Care Improvement (BPCI) initiative—a new program that aims to improve health outcomes and reduce waste in the health care system. As part of this initiative, the Duke Heart Center is piloting an integrated approach to delivering percutaneous interventions (PCIs) that promises not only to transform how cardiovascular medicine is practiced at Duke, but inform changes across the country.

Cardiologist Manesh Patel, MD, is leading Duke's BPCI effort. "We are looking forward to advancing Duke's reputation as a national leader in heart care by developing and implementing new strategies for obtaining efficiency in PCI delivery and, most importantly, continuing to adhere to the highest quality and safety standards," says Patel. "We're confident that our new approach will not only result in reductions to some of the unnecessary costs plaguing the health care system, but greater benefits for our patients, including better outcomes."

This past year, Duke and CMMI agreed upon quality and safety standards, as well as a "bundled payment" that would cover the costs of a typical patient's PCI treatment before, during, and for up to 90 days after surgery (a cost target). Once the pilot begins, Duke will be responsible for meeting the mutually agreed upon quality, safety and cost targets every time it delivers this bundle of services associated with PCI—or risk lower reimbursement.

In light of this new arrangement, which will begin in 2014, the Duke Heart Center is re-evaluating many long-held beliefs associated with PCIs—including whether or not

NPO (nothing by mouth) and overnight stay are truly necessary for patients—and capturing patient preferences prior to surgery with the goal of improving the patient experience. The newly redesigned approach will also make use of Duke's new, system-wide electronic health record to track meaningful clinical outcomes and patient satisfaction and provide the heart team with real-time, secure access to patient angiograms so potentially life-saving decisions can be made without delay. In addition, patients who come to the Duke Heart Center for their PCI will reap the benefits of a comprehensive treatment program that includes education about the procedure and aftercare, modification of risk factors, and strategies to improve their medication adherence.

"Because doctors who participate in the BPCI initiative will be accountable for a patient's care up to 90-days after they are discharged, they will be much more cognizant of giving patients the support and information to achieve and maintain optimal health long after they leave the hospital," said Patel. "As payers and health systems continue to address the problem of rising health care costs by adopting similar approaches in the future, ensuring that patients are engaged with their own health will be critical."

Duke's bundled payment initiative begins in early 2014. For more information, please contact Dr. Manesh Patel at manesh.patel@dm.duke.edu.



Launching a New Educational Gateway

Educational Gateway

The Duke Heart Center continues to enhance and expand its reputation as a leading educator. Starting in early 2014, busy health care professionals—including physicians, allied health professionals, nurses, and pharmacists—will be able to access timely, trusted medical educational programs using Duke's Education Gateway. For heart care professionals, the Education Gateway will provide an affordable, convenient and engaging way to maintain credentialing requirements while learning about the latest, evidence-based practices from the Duke Heart Center's nationally-ranked team of medical experts. Powered by EthosCE LMS, the online gateway will house hundreds of talks and be easily accessible from your desktop computer or mobile devices.

Continuing medical education and professional development

Duke Heart Center is committed to providing engaging educational opportunities for cardiologists, primary care physicians, advanced practice providers, nurses, pharmacists and other health care providers. Symposia offerings in 2014 will include topics in structural heart disease, advanced heart failure, electrophysiology and advanced coronary and vascular disease. For more information on the full schedule or the events listed, visit cardiology.duke.edu, call 919-401-1200, or email cme@mc.duke.edu.

Duke Cardiology Fellowship Program

For over 50 years, the Duke Cardiology Fellowship Program has trained top residents from across the U.S. in the evidence-based and innovative treatment of heart disease while exposing them to the diverse and unique resources Duke has to offer. We have trained over 500 fellows; over half have been hired into academic faculty positions and many have become leaders in academia, medicine, industry, or government. Our fellows pursue advanced training in interventional cardiology, advanced heart failure and transplantation, electrophysiology, imaging, and structural and adult congenital heart disease. Our active alumni group, the Duke University Cooperative Cardiovascular Society (DUCCS), ensures our fellows make an impact far beyond the walls of our institution.

2014 Symposia

January 24-25, 2014

4th Annual Duke Electrophysiology Summit
Advances in Arrhythmia Management:
Novel AF Therapies and Appropriate Device Use
Durham, NC

February 22, 2014

Aortic Stenosis Valve Symposium
Co-sponsored by the American College
of Cardiology and Duke
Durham, NC

April 12, 2014

**1st Annual Sudden Cardiac Death in
Athletes Symposium**
Durham, NC

April 26, 2014

1st Annual Preventive Cardiology Symposium
Durham, NC



For the full schedule of
Duke CME events, visit
cardiology.duke.edu,
call 919-401-1200,
or email cme@mc.duke.edu



Developing Treatment Guidelines to Improve Care



Duke Heart Center faculty have a profound impact on setting standards for quality heart care through their work with the American Heart Association (AHA), American College of Cardiology (ACC), National Heart, Lung, and Blood Institute, and many others.

We are involved in developing appropriateness guidelines and performance indicators for cardiovascular imaging, PCI, CABG, ICDs, and TAVR – as well as chairing the overarching ACC/AHA Performance Measures Task Force that champions the development of new performance measures to improve cardiovascular care quality.

Recent guidelines include:

Management of Patients With Atrial Fibrillation (Compilation of 2006 ACCF/AHA/ESC and 2011 ACCF/AHA/HRS Recommendations), 2013

Leslie H. Curtis, PhD, and Magnus Ohman, MD, FACC

2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction

Christopher Granger, MD

ACCF/AHA Clinical Practice Guideline Methodology Summit Report, 2013

Magnus Ohman, MD, FACC, and Eric Peterson, MD, MPH

2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS Guideline for the Diagnosis and Management of Patients With Stable Ischemic Heart Disease

Pamela S. Douglas, MD

2013 ACCF/AHA Key Data Elements and Definitions for Measuring the Clinical Management and Outcomes of Patients With Acute Coronary Syndromes and Coronary Artery Disease

Eric Peterson, MD, MPH

2014 ACCF/AHA Update of the Guideline for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction

Eric Peterson, MD, MPH

2012 ACCF/SCAI/STS/AATS/AHA/ASNC/HFSA/SCCT Appropriate Use Criteria for Coronary Revascularization

Manesh Patel, MD and Peter Smith, MD

National Leadership

Sana M. Al-Khatib, MD, MHS

Member, Board of Trustees, Heart Rhythm Society
Member, Health Policy Committee, Heart Rhythm Society
Chair, Legislative Subcommittee, Heart Rhythm Society
Co-Chair, Measure Development Task Force, Heart Rhythm Society
Member, the ICD Registry Steering Committee

Robert M. Califf, MD

Member, AHA Scientific Publishing Committee
Member, IOM Board on Health Sciences Policy
Member, NHLBI Board of External Experts
Member, NIH National Advisory Council on Aging
Editor-in-Chief, American Heart Journal

Zubin Eapen, MD, MHS

Member, AHA Target: HF Work Group
Member, AHA Get With The Guidelines Heart Failure Clinical Work Group

Donald Glower, MD

Member, The Journal of Thoracic and Cardiovascular Surgery Editorial Board
Member, Journal of Cardiac Surgery Editorial Board
Member, South Atlantic Cardiovascular Society Steering Committee
Co-Principal Investigator, EVEREST Evalve FDA Phase III Trial

Christopher Granger, MD

Chair Emeritus, AHA Mission: Lifeline
Member, ACTION Registry: GWTG Research and Publications Committee
Member, NHLBI Board of External Experts

Adrian Hernandez, MD

Vice-Chair, AHA Heart Failure and Transplant Committee
Member, HFSA Guidelines Committee
Member, ACCF Task Force on Clinical Expert Consensus
Member, Joint Commission Ventricular Assist Device Expert Panel

G. Chad Hughes, MD

Member, STS Task Force on Thoracic Endografting
Member, STS/FDA Center for Devices and Radiological Health Network of Experts, Percutaneous Heart Valves Bench

Robert Jaquiss, MD

Chairman, Berlin Heart Study Group and Publications Committee
Member, Education Committee of the American Association for Thoracic Surgery
Member, ACC Adult Congenital and Pediatric Cardiology Council

William E. Kraus, MD

Member, Board of Trustees, American College of Sports Medicine
Member, Board of Directors, National Physical Activity Plan Alliance
Member, Board of Directors, International Society for Physical Activity and Health
Member, AHA Council on Basic Science
Member, AHA Council on Lifestyle and Cardiometabolic Health

L. Kristin Newby, MD, MHS

Immediate past-Chair, AHA Council on Clinical Cardiology
Immediate past-President, Society of Cardiovascular Patient Care
Member, AHA OQR - TCT Peer Review Study Group
Member, COCATS Task Force 15, Critical Care Cardiology
Senior Associate Editor, Journal of the American Heart Association

Christopher O'Connor, MD

Treasurer, Heart Failure Society of America
Member, FDA Working Group: Acute Heart Failure Syndromes – Clinical Trials
Member, NIH/NHLBI ED Management of Heart Failure Work Group
Editor-in-Chief, Journal of the American College of Cardiology - Heart Failure

Magnus Ohman, MD

Member, FDA Center for Device Evaluation Panel
Member, ACC/AHA Guidelines Oversight Committee
Member, ESC Task Force for Non-STEMI Guidelines

Manesh Patel, MD

Chair, AHA Diagnostic and Invasive Cath Committee
Chair, Writing Committee, ACCF/SCAI/STS/AATS/ASNC Appropriateness Criteria for Coronary Revascularization
Member, ACC Task Force, Appropriate Use Criteria Writing Committee, AHA/ACC CABG Guidelines Committee

Eric Peterson, MD

Chair, ACC/AHA Performance Measures Task Force
Board President, AHA Mid-Atlantic Affiliate
Member, ACC Quality Oversight Committee
Member, IOM Large Simple Trials Group

Jonathan P. Piccini, MD, MHS

Member, Heart Rhythm Society Research Committee
Member, AHA Get with the Guidelines Atrial Fibrillation Clinical Work Group
Member, Electrocardiography & Arrhythmias Committee of the AHA

Howard Rockman, MD

Editor-in-Chief, The Journal of Clinical Investigation

Matthew T. Roe, MD, MHS

Ex-Officio Member, NCDR Cath/PCI Registry, Research and Publications Sub-Committee
Member, AHA Mission Lifeline Science Task Force
Member, National Cardiovascular Data Registry, Scientific Oversight Committee

Joseph Rogers, MD

Member, Board of Directors, International Society for Heart and Lung Transplantation
Vice Chair, UNOS Thoracic Committee
Principal Investigator, HeartWare ENDURANCE Trial

Svati Shah, MD

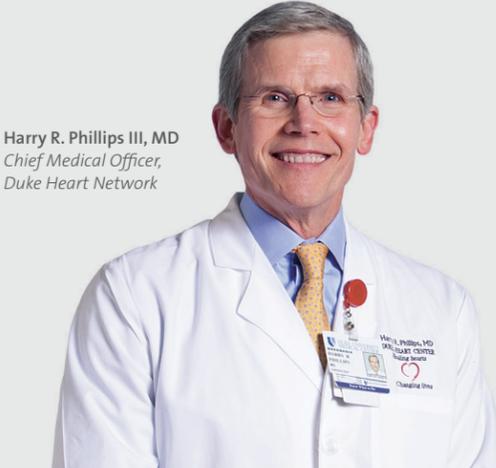
Member, Functional Genomics & Translational Biology Council, AHA Professional Education & Publications Committee
Member, NHLBI Heart Failure Network, Genomics Core Committee
Member, American Society of Clinical Investigation (ASCI)

Peter K. Smith, MD

Vice Chair, ACC/AHA CABG Guidelines Committee
Member, ACCF/AHA Task Force on Practice Guidelines: Stable Ischemic Heart Disease
Member, PCI Overuse Work Group, Joint Commission/AMA National Summit on Overuse

Duke Heart Network

Our experience working with hospitals to develop cardiac services results in customizable, comprehensive roadmaps for establishing efficient, high-quality programs.



Harry R. Phillips III, MD
Chief Medical Officer,
Duke Heart Network

Duke Heart Network’s unique affiliations facilitate community and academic relationships. They combine the expertise of Duke Heart Center with the strengths of local hospitals to develop new clinical services, enhance existing programs, and improve outcomes through the use of evidence-based therapies and benchmarking. Duke-affiliated cardiovascular programs include outpatient clinics and hospital-based affiliations throughout the Southeast and now in Northern Michigan. Network services include new program/service development; medical, staff, and community education; implementation of evidence-based standards of care; strategic planning; regional differentiation; quality oversight; and clinical business and operational management.

Hospital-Based Clinical Affiliates:

- Alamance Regional Medical Center, Burlington, NC
- Beaufort Memorial Hospital, Beaufort, SC
- Danville Regional Medical Center, Danville, VA
- Indian River Medical Center, Vero Beach, FL
- Lexington Medical Center, West Columbia, SC
- Marquette General Health System, Marquette, MI
- Southeastern Regional Medical Center, Lumberton, NC

Community Cardiology and Outreach Clinics:

- Cardiovascular Surgery Clinic of Danville, Danville, VA
- Duke Cardiology of Raleigh, Raleigh, NC
- Duke Cardiology of Sanford, Sanford, NC

- Duke Cardiology/CV Surgery-Lumberton, Lumberton, NC
- Duke Electrophysiology, Danville, VA
- Kernodle Clinic, Burlington, NC
- Northern Carolina Cardiology, Henderson, NC
- Person Memorial Hospital Cardiology, Roxboro, NC
- Triangle Heart Associates, Durham, NC

Expanding services close to home

Duke Heart Network’s experience working with hospitals to develop cardiac programs results in customizable, comprehensive roadmaps for establishing efficient, high-quality programs. Affiliates benefit from access to expert clinicians who serve as national thought leaders for clinical and translational research--forming the basis for the latest practice guidelines and quality metrics for cardiovascular care.

In 2013, Duke Heart Network:

- Launched two 24/7 primary PCI programs at Beaufort Memorial Hospital, Beaufort, SC, and Danville Regional Medical Center, Danville, VA
- Initiated a percutaneous peripheral vascular interventional program and opened a second coronary catheterization lab at Southeastern Health Heart and Vascular in Lumberton, NC
- Implemented a CTO program and a valve clinic at Indian River Medical Center, Vero Beach, FL
- Opened a new EP lab and two cardiovascular specialty clinics at Lexington Medical Center, West Columbia, SC

Quality oversight, education and training

Duke collaborates closely with affiliate sites to achieve and exceed national cardiovascular registry benchmarks. The Duke Heart Network recently implemented a comparative cardiovascular registry report, designed with input from our affiliate sites. Data is reviewed quarterly and benchmarked across affiliate sites and Duke Heart Center programs and compared to national registry performance including STS, AHA/ACC NCDR GWTG-Action and ACC’s Cath PCI®. The Duke Heart Network regularly hosts clinical and quality “Collaboratives,” which allow the sharing of best practices – with a goal of driving process improvements, enhancing outcomes, and designing targeted, educational programs. Affiliate site awards demonstrate their commitment to quality.

5
NCDR ACTION Registry Awards

4
Heart Failure Awards

3
Stroke Awards

1
STS 3-Star Rating

1
Chest Pain Center Accreditation

Duke Heart Affiliate Hospital

Duke Heart Affiliate Hospital	2013 Recognition for Cardiovascular Quality
Alamance Regional Medical Center, Burlington, NC	<ul style="list-style-type: none"> Citation of Merit for the QUEST award for high-value healthcare
Beaufort Memorial Hospital, Beaufort, SC	<ul style="list-style-type: none"> AHA® GWTG™ Gold Achievement Award for Heart Failure
Danville Regional Medical Center, Danville, VA	<ul style="list-style-type: none"> Society of Cardiovascular Patient Care Chest Pain Center Accreditation AHA GWTG Silver Achievement Award for Heart Failure
Indian River Memorial Hospital, Vero Beach FL	<ul style="list-style-type: none"> NCDR® ACTION Registry®-GWTG-Silver Achievement Award AHA ACTION Registry-GWTG-Stroke Gold Achievement Award Society of Thoracic Surgeons 3-Star Rating
Lexington Medical Center, West Columbia, SC	<ul style="list-style-type: none"> NCDR ACTION Registry-GWTG MissionLifeline Silver Achievement Award AHA GWTG-Stroke Gold Achievement Award
Marquette General Hospital, Marquette MI	<ul style="list-style-type: none"> The Joint Commission Gold Seal of Approval for Primary Stroke Centers
Southeastern Health Heart and Vascular managed by Duke Medicine, Lumberton, NC	<ul style="list-style-type: none"> NCDR ACTION Registry-GWTG Mission: Lifeline Bronze Achievement Award NCDR ACTION Registry-GWTG Silver Achievement Award Ranked #3 in NC for Overall Cardiac Services (Healthgrades) Ranked #2 in NC for Cardiology Services (Healthgrades) 5-Star Recipient for Treatment of Heart Failure (Healthgrades)

Duke Clinical Research Institute

Duke is the coordinating center and analytic engine for 10 major national quality initiatives.



Duke Heart Center is internationally known for translating scientific discoveries into better treatments for heart disease. We thrive on the direct connection between the patient's bedside and research outcomes.

We are home to the **Duke Clinical Research Institute (DCRI)**— the world's foremost academic research organization – which has conducted more than 870 studies in 65 countries at more than 37,000 sites, enrolling more than 1.2 million patients. DCRI operates the Duke Databank for Cardiovascular Diseases, the largest and oldest institutional cardiovascular database in the world, which continues to inform clinical decision-making 40 years after its founding.

Duke is the coordinating center and analytic engine for several national quality initiatives, including:

- The ACC's National Cardiovascular Data Registry
- The Society of Thoracic Surgeons' National Database
- The CRUSADE National Quality Improvement Initiative
- The AHA's Get with the Guidelines initiative
- The Heart Failure Clinical Research Network
- The Cardiothoracic Surgical Trials Network
- The Clinical Translational Science Awards Consortium
- The Outcomes Registry for Better Informed Treatment of Atrial Fibrillation
- (ORBIT-AF)
- The STS/ACC TVT Registry

Cardiovascular clinical trials experience

- Provided faculty leadership and coordination for 54 cardiovascular clinical studies
- Worked with more than 12,000 sites
- Enrolled more than 53,000 subjects

Duke Cardiology publications

- More than 8,000 publications in peer-reviewed journals
- Published in high impact factor journals, including: The New England Journal of Medicine, The Journal of the American Medical Association, The Lancet and The American Heart Journal

NUMBER OF PUBLICATIONS BY FISCAL YEAR



Eric D. Peterson, MD, MPH
Director, Duke Clinical Research Institute

Resources

Resources for Clinicians

Consultations and Referrals

Schedule appointments and access information by calling:

- Duke Consultation and Referral Center
800-MED-DUKE (633-3853)
7:30 a.m. – 6:00 p.m. (EST)
- Duke Heart Center
888-HRT-DUKE (478-3853) or 919-681-5816
8:00 a.m. – 5:00 p.m. (EST)
- Duke University Hospital (After Hours)
Dial 919-684-8111 and ask for the on-call cardiologist.

Acute Care Services

- Acute Chest Pain Clinic
Same-day appointments for patients with urgent (not emergent) chest pain. Area physicians can dial 888-HRT-DUKE (478-3853) for details.
- Acute Myocardial Infarction (MI) Hotline
When ECG indicates ST-elevation MI, regional physicians and EMS personnel can contact a Duke cardiologist, activate the cath lab, and arrange transport to the nearest Duke Heart Center or affiliate site for PCI. Dial 919-627-0485 to learn more.

Continuing Medical Education and Professional Development

Educational opportunities for clinicians, educators, and researchers include:

- Office of Continuing Medical Education
Offers live courses, Web- and CD-ROM-based seminars, and remote real-time training. Visit cme.mc.duke.edu and/or cardiology.duke.edu, call 919-401-1200, or e-mail cme@mc.duke.edu.
- Duke Clinical Research Institute's Clinical Medicine Series
Offers an array of courses and conferences. Visit dcri.org/education-training/dcms or e-mail dcms@dcri.duke.edu.

Clinical Trials

- Duke Clinical Research Institute
Interested researchers may visit dcri.org/trial-participation.
- Clinical Trials Networks Best Practices
For clinical research resources, visit ctnbestpractices.org. Co-sponsored by DCRI and NIH.
- Duke Heart Center
Visit dukehealth.org/clinicaltrials for partial lists of current trials.

Join us in changing practice and changing lives. Stay in touch with the latest advances and educational opportunities from Duke Heart Center through these resources, available year-round:

Resources for Patients

- Duke Consultation and Referral Center
888-ASK-DUKE (275-3853)
- Heart Center Patient Support Program
Unites recovered Duke Heart Center patients with current patients. Dial 919-681-5031.
- Special Constituent Patient Program
Patient Navigators serve patients with unique needs or who require special assistance. Learn more at 919-684-6919.
- International Patient Center
Dial 919-681-3007 for details.

Support Duke Heart Center

To find out how you can support the Duke Heart Center's mission to achieve the highest level of excellence in patient care, research, and education, please contact:

L. Blue Dean
Executive Director, Development
710 West Main Street, Suite 200
Durham, NC 27701
919-385-3159
blue.dean@duke.edu

Visit dukemedicine.org/heart to learn more about our patient care services.

Access the Duke Heart Center Report Online

Visit dukemedicine.org/heartreport for a PDF of this report. While care was taken to ensure the accuracy of data and information in this publication, any necessary updates or corrections will also be available via this Web page.



Ranked sixth among the nation's best heart programs by U.S. News & World Report for 2013-2014 – and in the top 10 for the past 20 years.



All three Duke University Health System hospitals have earned Magnet status for nursing excellence from the American Nurses Credentialing Center.



Duke's heart surgeons have a 3-star rating from the Society of Thoracic Surgeons, placing them in the top 10-15% of adult cardiac surgery programs.



All three Duke University Health System Hospitals received Platinum Performance Achievement Awards for their performance on the ACTION Registry-GWTG indicators for evidence-based treatment of AMI patients.



Duke University Hospital ranked #12 among America's Best Hospitals by U.S. News & World Report, 2013-2014.



Home to 2012 Nobel Laureate, Robert J. Lefkowitz, MD, a cardiologist and physician scientist, whose discovery of G protein-coupled cell receptors paved the way for modern pharmaceuticals.



The American Heart Association recognizes Duke for achieving 85% or higher adherence to all GWTG-HF Performance Achievement indicators for consecutive 12 month intervals and 75% or higher compliance with at least 4 GWTG-HF Quality Measures to improve quality of patient care.



Awarded the Bronze Quality Achievement Award from the AHA's Mission: Lifeline Program in recognition of our high standard of care for heart attack patients.