

**Adult Congenital Heart Disease:
A 21st Century Challenge Post-test questions**

For CME credit, answer the following questions by marking your answers in the grid on the back of the CME insert and return it per the instructions.

1. What is the most important problem after Senning operation?

- A. Ventricular Tachycardia
- B. Aortic Regurgitation
- C. Left Ventricular Failure
- D. Right Ventricular Failure

2. Name a cardiovascular malformation that is expected to require treatment beyond the first year of life.

- A. Patent Ductus
- B. Hypoplastic Left Heart Syndrome
- C. Vascular Ring
- D. Small muscular VSD

3. How many cardiac ventricles does a Fontan patient typically possess?

- A. Three
- B. None
- C. Two
- D. One functioning ventricle

4. What is an uncommon complication of aortic coarctation?

- A. Berry Aneurysm in the circle of Willis
- B. Deep venous thrombosis
- C. Aortic aneurysm
- D. Hypertension

Earn 1.0 CME credit - see article inside.



UNIVERSITY OF MINNESOTA
Amplatz Children's Hospital

2450 Riverside Ave., Suite F-19
Minneapolis, MN 55454



UNIVERSITY OF MINNESOTA
Amplatz Children's Hospital

THE HEART CENTER UPDATE



All about *Eve*

How thousands of babies could benefit from this family's experience...page 3

5

Offering A New Transcatheter Heart Valve

4

The Adult Congenital Heart Disease Program: Expanded Hours and Increased Staffing

also...

After an ASD Repair, a Little Gopher is Back on the Ice..... 4
Awards & Honors..... 6
New Hospital Update..... 7
Teenager's Much-Anticipated Valve Replacement..... 8
A New Outlook for Baby Oliver..... 9
CMEsee insert

THE HEART CENTER UPDATE

Dear Colleague,

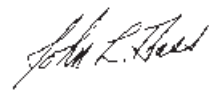
Each year in the United States, 32,000 babies — or nearly 1 percent — are born with a congenital heart defect (CHD). Because of the success of leading-edge research at University of Minnesota Amplatz Children's Hospital and other institutions, most infants with a CHD will survive into adulthood. In fact, according to the American Heart Association, there are now 650,000 Americans over the age of 25 that have a CHD.

In this issue of *The Heart Center Update*, you will read about how University of Minnesota Amplatz Children's Hospital — through the Adult Congenital Heart Disease and Cardiovascular Genetics Program — helps adolescents with CHD transition their heart care into adulthood. In addition, you will learn about three children — Maggie, Hannah and Oliver — who were born with CHDs and benefited from treatment at University of Minnesota Amplatz Children's Hospital.

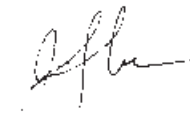
Beginning with the world's first successful open-heart surgery using hypothermia in 1952, University of Minnesota Amplatz Children's Hospital has been making strides in CHD treatments. Most recently, we initiated newborn pulse-oximetry screening for CHDs (see cover article).

Physicians and staff at The Heart Center at University of Minnesota Amplatz Children's Hospital provide children with the high-quality care that only a major teaching institution can offer. We are proud of our long-standing tradition of cardiovascular innovation and look forward to partnering with you to provide the most advanced treatments to your patients.

Sincerely,



John Bass, M.D.



Jim St. Louis, M.D.



Neil Kooy, M.D.



Eve, on her first birthday.

All about Eve:

A Family's Experience Could Benefit Thousands of Babies

A couple of hours before Annamarie and her newborn, Eve, were scheduled to leave the hospital (after Eve's birth), doctors diagnosed Eve with mitral valve regurgitation, a severe congenital heart disease (CHD). Although Annamarie was shocked by the diagnosis, she was grateful that physicians detected the condition early.

After Eve's diagnosis, Annamarie began researching her condition and learned that an easy and inexpensive test called pulse oximetry [see box], often can help physicians detect critical types of CHD while infants are still in the hospital. Without early diagnosis and intervention — within the first month of life — critical CHD can cause long-term disabilities or death.

With help from University of Minnesota Amplatz Children's Hospital pediatric cardiologists, Lazaros Kochilas, M.D., and Jamie Lohr, M.D., Annamarie put together a working group of pediatric cardiologists, neonatologists, state officials and administrators who devised a plan to implement newborn screenings for critical CHDs. As a result of this group's efforts, beginning in summer 2010, five Minnesota hospitals*, including University of Minnesota Medical Center, Fairview, will participate in the newborn pulse oximetry screening pilot project. The Minnesota

Department of Health supports this project and plans to expand it to other Minnesota hospitals, and eventually create a state-wide program.

"Through this screening program, we plan to study the viability of implementation as well as false positive and false negative rates," states Kochilas. "If the pulse oximetry screening program is successful in Minnesota, we hope to support an initiative to implement national CHD screening — similar to the existing neonatal screens for other serious diseases." Kochilas explains that conditions already included

in standard newborn screens affect 1 per 30,000 to 40,000 live births while clinically unapparent critical CHD affects 1 per 16,000 to 18,000 live births.

This project is already making a national impact. The U.S. Department of Health and Human Services Advisory Committee on Heritable Disorders in Newborns and Children accepted the team's nomination for this screen to have consideration for nation-wide implementation.

Because of early diagnosis and intervention of Eve's CHD, she is now a bright and playful 16-month old. Annamarie says that Eve's situation and the successful outcome is what is driving her to ensure that pulse oximetry screening saves babies not only in Minnesota but also throughout the entire U.S.

>> Eve's family created 1in100.org to share information on CHD and encourage pediatric heart advocacy. Visit 1in100.org or [Facebook.com/1in100](https://www.facebook.com/1in100).

Pulse Oximetry Screening

Most CHDs have some mixing of oxygenated "red" and deoxygenated "blue" blood that leads to mild drops in the oxygen saturation (cyanosis), which the human eye cannot easily detect. Through pulse oximetry, doctors are able to identify even mild degrees of cyanosis, which can signal an anomaly with a baby's heart. Pulse oximetry screening is quick and painless — a light-source sensor wrapped around the baby's foot measures the amount of oxygen in the blood.

**Other Minnesota hospitals that are part of the CHD screening pilot program are Fairview Red Wing, Fairview Ridges, Fairview Southdale and Regions (St. Paul).*

Adult Congenital Heart Disease Program: Expanded Hours and Increased Staffing

Advances in medical technology have increased the likelihood — to 85 to 90 percent — that children with congenital heart defects will survive into adulthood. Because of this, over the past few years, the number of adults with congenital heart disease in the U.S. has increased to 650,000, surpassing the number children living with congenital heart disease.

In response to this trend, in 2009, in conjunction with adult cardiology, University of Minnesota Amplatz Children's Hospital opened an Adult Congenital Heart Disease and Cardiovascular Genetics Program. The program offers comprehensive cardiovascular care for individuals who are born with congenital cardiovascular anomalies that require ongoing evaluation and treatment in adolescence and adulthood.

Providing outpatient and inpatient consultation, the program offers a variety of services including:

- Electrocardiographic, echocardiographic, genetic and radiologic studies
- Diagnostic and interventional catheterization
- Cardiac surgery

- Hybrid procedures
- Non-cardiac services (obstetrics/gynecology, genetics)
- Electrophysiologic (EP) studies

The EP studies and procedures include 24-hour Holter examinations, event recorders, invasive EP studies and insertion of cardiac pacemakers and defibrillators.

The Adult Congenital Heart Disease and Cardiovascular Genetics Program also provides advanced therapies — cardiac transplantation, ventricular-assist devices, resynchronization therapy and medical treatment of heart failure and pulmonary hypertension — for adult patients at the University of Minnesota Medical Center, Fairview.

Since the program began, staff has provided care to 150 patients with congenital-heart disease. The program has also increased physician staffing, making it possible for the clinic to provide patient services four times each month.

>> For appointment scheduling, call Maria Arvin at 612-626-1374. You can also leave a message for Pat Christie at 612-625-7152.

The Adult Congenital Heart Disease and Cardiovascular Genetics Program

Location:

University of Minnesota
Phillips-Wangensteen Building
Third Floor, Clinic 3B
516 Delaware St. SE
Minneapolis, MN 55455

Clinics:

Every Tuesday

Staff:

Pat Christie, R.N., clinical coordinator
Jay Hall, R.D.C.S., congenital echocardiographer

Sarah Kreykes, M.S., genetic counselor
Jamie Lohr, M.D., pediatric cardiologist
Cindy Martin, M.D., adult cardiologist
James Moller, M.D., pediatric cardiologist
Lee Pyles, M.D., pediatric cardiologist

Cardiothoracic Surgery Consultants:

Roosevelt Bryant III, M.D., congenital cardiac surgeon
James St. Louis, M.D., congenital cardiac surgeon



Cardiologist Daniel Gruenstein, M.D., and 3-year-old Maggie Wood, were recognized at the Gopher Women's Hockey play-off game on Feb. 27.

After an ASD Repair, a Little Gopher is Back on the Ice

Last January, Daniel Gruenstein, M.D., a pediatric cardiologist, repaired 3-year-old Maggie's atrial septal defect (ASD) in the hospital's hybrid lab. The procedure to patch Maggie's heart was only about 10 minutes and was completed through catheter in Maggie's leg. Maggie, who plays hockey, was able to resume playing within one week of the procedure.

Family History of ASDs

When Maggie's mother, Carie, was 4 years old, she had an ASD repair. At the time, however, the procedure was more invasive and risky, and doctors gave Carie a 50 percent chance to survive and she did. Now, Maggie's grandmother has an ASD — a recent diagnosis — and because of the success of Maggie's procedure, she is less apprehensive of having the repair procedure.

>> For more information on ASD closures or hybrid suite, contact Daniel Gruenstein, M.D., at gruen040@umn.edu or 612-626-2755.

>> To refer a patient, call 888-KIDS-UMN (888-543-7866)



Far left: Melody placement
Left: Melody side view with leaflets
Images provided by Medtronic.

A New Transcatheter Heart Valve

This fall, University of Minnesota Amplatz Children's Hospital plans to begin offering the Melody® Transcatheter Pulmonary Valve (TPV) to patients who have pulmonary congenital valve defects. Developed by Minnesota-based, Medtronic, the Melody TPV is the first transcatheter heart valve — of any kind — approved for commercial use in the United States. University of Minnesota Amplatz Children's Hospital congenital interventional cardiologist, Daniel Gruenstein, M.D., will be implanting the device.

The U.S. Food and Drug Administration first approved the Melody TPV in early 2010 under a humanitarian device exemption. The device, however, has been available in Europe and Canada since 2006. To date, more than 1,300 patients worldwide have received a Melody TPV.

James St. Louis, M.D., cardiothoracic surgeon and co-director of The Heart Center at University of Minnesota Amplatz Children's Hospital, says, "Many patients with congenital pulmonary-valve defects require implantation of prosthetic valve conduit, but these conduits have a limited lifespan. The Melody valve provides a less invasive way to extend the life of the failed conduit, delaying the next open-heart surgery, and possibly leading to fewer open-heart surgeries throughout the patient's life."

What is the Melody® TPV and how does it work?

Melody TPV is an artificial heart valve that physicians can implant in patients who have right ventricular outflow tract (RVOT) conduit defects. The Melody TPV is indicated for use in pediatric and adult patients whose RVOT conduits are stenotic

or regurgitant. Prior to implantations, patients must have a full circumferential RVOT conduit ≥ 16 mm in diameter.

Made from a biological material — a bovine jugular vein — the Melody TPV is designed to help re-establish blood flow from the right ventricle to the patient's lungs. Using a balloon-in-balloon catheter system and fluoroscopic guidance, physicians implant the Melody TPV, which can be expanded from 18-22 mm. It is indicated for use in pediatric and adult patients.

Benefits

The Melody TPV is placed percutaneously through femoral venous access, resulting in a faster recovery time and fewer complications than traditional open-heart surgery. After receiving a Melody valve, patients typically spend one to two days in the hospital and then resume normal activities within a week. The Journal of the American College of Cardiology reported procedural success in 97 percent of patients, and immediate and short-term improvements in the patients' heart and lung functions. Additionally, in a clinical study, Medtronic found that the Melody TPV restores pulmonary valve

competence, relieves conduit obstruction and delays the patient's next surgical intervention.

Associated Risks

As with all cardiovascular implantable devices, complications are always a concern. Patients receiving the Melody valve might experience procedural risks such as conduit rupture, coronary artery compression, arrhythmias, allergic reactions, infection and hematomas. Device-related complications include stent fracture, endocarditis, embolization, valvular dysfunction, leaks, thrombosis and hemolysis.

- >> For more information about Medtronic's Melody TPV, visit Melody-TPV.com
- >> For more information on Melody TPV implantation at University of Minnesota Amplatz Children's Hospital, contact Dan Gruenstein, M.D., at 612-626-2755 or gruen040@umn.edu

Honors & Awards

U.S. Department of Health and Human Services Grant

Congratulations to Lee Pyles, M.D., and Sue Berry M.D., for receiving a Maternal and Child Health Bureau grant from the U.S. Department of Health and Human Services. Pyles and Berry will serve as co-principal investigators for “MEMSCIS for Inborn Errors of Metabolism,” in which they will use the Midwest Emergency Medical Services for Children Information System (*MEMSCIS.com*). This Web site allows

physicians and parents — in the Maternal and Child Health Bureau Region 4 (Minn., Wis., Mich., Ill., Ind., Ohio, Ky.) — to host emergency-focused clinical summaries for children with inborn errors of metabolism. An initial study involving children with heart disease indicated parents were more comfortable in dealing with emergencies involving their child when they had access to MEMSCIS information.

Recent Staff Publications

Bartlett, H.; Escalera, R.; Patel, S.; Wedemeyer, E.; Volk, K.; Lohr, J.L.; Reinking, B. “Echocardiographic Assessment of Cardiac Morphology and Function in Xenopus.” *Comp Med.* 2010; 60(2):107-13.

Foker JE, Berry JM, Pyles LA. Treatment Algorithm for PAIVS. *Progress in Pediatric Cardiology* 2010; 29(1):61-63.

Foker JE, Berry JM, Setty SP, Harvey BA, Rivard AL, Gittenberger-de Groot AC, Pyles LA. Growth and Function of Hypoplastic Right Ventricles and Tricuspid Valves in Infants with Pulmonary Atresia and Intact Ventricular Septum. *Progress in Pediatric Cardiology* 2010; 29(1):49-54.

Person, A.D.; Beiraghi, S.; Sieben, C.M.; Hermanson, S.; Neumann, A.N.; Robu, M.E.; Schleiffarth, J.R.; van Bokhoven, H.; Mazzeu, J.F.; Petryk, A.; Brunner, H.G.; Ekker, S.C.; Lohr, J.L. “Wnt5a Mutations Cause Autosomal Dominant Robinow Syndrome.” *Developmental Dynamics*, 2010 Jan; 239(1): 327-37.

Pyles LA, Berry JM, Steinberger JS, Foker JE. Initial, Intra-Operative, and Post-Operative Evaluation of Children with Pulmonary Atresia with Intact Ventricular Septum with Emphasis on Evaluation of Coronary Connections to the Right Ventricle. *Progress in Pediatric Cardiology* 2010; 29(1):25-34.

Pyles LA, Scheid ME, McBrady MP, Hoyman KH, Hanse M, Jamrozek K, Hannan JC, Baker CM, Duval SJ, Moller JH, Hines CI. Parent and Emergency Physician Comfort with a System of On-line Emergency-Focused Medical Summaries for Infants with Significant Heart Disease Level. In Press 2010 *Maternal Child Health Journal*.

Yamamoto LG, Pyles LA, Del Beccaro MA, Zuckerman AE, Tham E, Sacchetti A. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine, Emergency Information Forms and Emergency Preparedness for Children with Special Health Care Needs. *Pediatrics* 2010; 125:829-837.

32 Physicians Honored in *Mpls/St. Paul Magazine* Top Doctors List 2010

Congratulations to 32 University of Minnesota Amplatz Children’s Hospital physicians named Top Doctors of 2010 by *Mpls.St.Paul Magazine*. These outstanding physicians were singled out by their peers as being among the best health-care providers in the Twin Cities. Among those listed were Neil Kooy, M.D. (Pediatric Critical Care), James St. Louis, M.D. (Pediatric Cardiothoracic Surgeon), and Marie Steiner, M.D., M.S. (Pediatric Critical Care) from The Heart Center. We’re proud to call them our own!

2009 National Institutes of Health Grants

Congratulations to Julia Steinberger, M.D., M.S., for receiving two 2009 National Institutes of Health Grants. Steinberger will serve as the principal investigator for the following projects:

- >> “Cardiovascular Risk and Insulin Resistance: Ages 7-40”
- >> “Metabolic Syndrome in Childhood Cancer Survivors”

Building Blocks

New University of Minnesota Amplatz Children's Hospital

In less than nine months, the new 227,000-square-foot University of Minnesota Amplatz Children's Hospital will open. This facility will unite more than 50 pediatric and maternal services in one family-friendly location on the Riverside campus in Minneapolis.

Vision

To continue our commitment to quality care that is safe, effective and patient- and family-centered, the new University of Minnesota Amplatz Children's Hospital facility followed several guiding principles to ensure that we designed the best care environment that meets the needs of patients and families, as well as health-care providers:

- Incorporate LEAN principles (ways to identify and eliminate unnecessary waste)
- Design a building to optimize light and visibility to facilitate healing, patient, family and staff safety, and way finding
- Design a facility to further collaboration and education of the next generation of health-care professionals
- Promote the integration of patient care, education and research
- Utilize the on stage/off stage design concept (patient and provider settings)

Family-Centered Care

One key result of the guiding principles is that all 96 pediatric patient rooms will be private with same-handed (right-handed) design – all rooms will have identical floor plans to encourage repetition and standardization — thereby reducing the chance for errors. The rooms will include three zones — caregiver, patient and family — that equals 390-square-feet.



The new University of Minnesota Amplatz Children's Hospital facility will open in late March 2011.

Other examples include a staff respite area, integrated family spaces, and noise reduction. "This new building aims to achieve our vision of providing the best possible environment to receive and provide health care for children," states Russ Williams, Vice President of Facilities and Operations. "Our multidisciplinary approach to the facility design has created an extraordinary patient- and family-centered space that will also allow our caregivers to be as efficient as possible." Williams says that he is confident that patients, families and clinicians will enjoy the new facility, and that it will result in an even higher level of exceptional care.

>> Discover more, and watch our progress at uofmchildrenshospital.org/newhospital

Quick Facts

The new University of Minnesota Amplatz Children's Hospital will feature:

- Private patient rooms that are 65 percent larger than the national norm for hospital rooms
- 24-hour pediatric emergency department with two trauma bays
- Minnesota's only dedicated pediatric dialysis center
- One of the largest pediatric blood and marrow transplant units in the U.S.
- Minnesota's first "green" children's hospital equipped with eco-friendly materials and green spaces

Young@Heart



13-year-old Hannah was nervous about having her heart valve replaced.



The surgery went well and Hannah (pictured with parents, Allen and Trudy) was discharged home three days early.



Hannah and her sister, Hailey.

A Teenager's Much-Anticipated Valve Replacement

Hannah loves playing softball, jumping on the trampoline, bicycling, texting and hanging out with friends. She's like many 13 year olds except she was born with a heart defect. Physicians diagnosed Hannah's heart condition — pulmonary atresia with intact ventricular septum — shortly after her birth. The condition only affects about eight in every 100,000 live births.

Hannah's mom, Trudy, says that the first sign that something was wrong with her newborn occurred during a feeding when Hannah began to turn blue. Three days after the event, doctors at University of Minnesota Amplatz Children's Hospital performed open-heart surgery to open Hannah's pulmonary valve. While in surgery, doctors also discovered a leaky tricuspid valve and placed a tranannular patch to stop the seepage. The surgery went well and 21 days later, Hannah went home.

For the next 13 years Trudy and her husband, Allen, brought Hannah to

Pulmonary atresia with intact ventricular septum:

A congenital defect in which the pulmonary valve fails to form correctly and is completely blocked by a layer of tissue.

University of Minnesota Amplatz Children's Hospital for her annual cardiovascular check-ups with pediatric cardiologist Shanthi Sivanandam, M.D. "The most difficult part for us [since Hannah's diagnosis] was knowing that someday Hannah would need another open-heart surgery to put in a new valve," says Allen.

In 2009 — at Hannah's annual appointment — Sivanandam found that Hannah's heart was enlarged. After additional testing, Sivanandam and surgeons at University of Minnesota Amplatz Children's Hospital determined that Hannah needed the new valve. "This time she was 13 and understood the serious nature of the operation," muses Trudy. "Waiting for the actual surgery was very stressful."

On Jan. 28, 2010, Hannah returned to the children's hospital for the procedure. "The staff did a good job of telling us what was going to happen that day," remembers Trudy. The procedure, in which cardiothoracic surgeon James St. Louis, M.D., placed a bioprosthetic porcine valve, lasted two hours. The surgery was so successful that Hannah only spent two days in the intensive care unit and two days in the general pediatric unit, and then was discharged home three days earlier than planned.

"For us," says Trudy, "the best part of the experience was the people — everyone we met seemed to really care about Hannah and us. Every time we asked for something, whether pain medicine or ice, the staff never made us feel like we were bothering them."

Hannah agrees. "The hospital had very good nurses that helped me get through the surgery and recovery," she says. "The food was much better than I expected it to be," chuckles Hannah.

Since the procedure, Hannah has returned to school and resumed her life. She will continue seeing Sivanandam for her annual check-ups. "It's nice to know that there is such a good hospital with good people that care about their patients," says Trudy.

Young@Heart



Doctors diagnosed Oliver with esophageal atresia and tetralogy of Fallot.



Oliver, with parents Rita and Tony, and brother, Farah.



After two surgeries, Oliver is a happy and active infant.

A New Outlook for Baby Oliver

Rita and Tony were overwhelmed with joy when they welcomed their son, Oliver, into the world on Sept. 1, 2009. But soon after — during Oliver’s first feeding — Rita noticed that her baby boy wasn’t swallowing properly.

Because Rita gave birth at University of Minnesota Medical Center, Fairview, doctors were able to immediately transfer Oliver to the Level III Neonatal Intensive Care Unit (NICU) at University of Minnesota Amplatz Children’s Hospital. Our Level III NICU provides the highest level of neonatal care and is adjacent to The Birthplace at University of Minnesota Medical Center, Fairview where more than 3,500 babies are born each year.

At the NICU, pediatric surgeon Robert Acton, M.D., diagnosed Oliver with esophageal atresia [see box]. Because babies with esophageal atresia often have other medical complications, Acton ordered additional tests. That same day, physicians diagnosed Oliver with tetralogy of Fallot [see box]. Says Rita, “It was difficult to think of the unknowns, but with God’s grace and

the surgeons’ experience, we felt Oliver was in good hands.”

One day after Oliver’s diagnoses, Acton repaired the infant’s esophageal atresia. After 15 days in the hospital, Oliver went home. “Dr. Acton is awesome,” says Tony. “He laid everything out objectively and assured us of his experience and expertise.”

Oliver spent the next few months recuperating from the esophageal atresia procedure and growing stronger. On Jan. 25, 2010, Tony and Rita brought Oliver back to University of Minnesota Amplatz Children’s Hospital for tetralogy of Fallot repair. Pediatric cardiothoracic surgeon, James St. Louis, M.D., performed the surgery.

“We could tell that Dr. St. Louis was a professional and that he understood what parents go through when their children are ill,” explains Tony. “He was so relaxed and comfortable, and that gave us the reassurance that he was the right guy [to be conducting the procedure].” During the tetralogy repair, Oliver was put on cardiopulmonary bypass (the heart-lung machine) for 45 minutes while St. Louis closed the hole in his heart and opened the obstruction to the lungs.

Since his procedure, Oliver has been doing well and his doctors expect him to continue

doing so. He adores his older brother, Farah, loves having his feet tickled, and laughs when he hears his father sneeze!

Says Rita, “Oliver won’t remember the surgery but it is another story that we will share with him when he grows up.” She continues, “We are appreciative of the entire team that worked with Oliver, especially, Dr. Acton and Dr. St. Louis. Everyone who surrounded both of them also deserves applause....well done!”

Esophageal atresia:

A congenital defect in which esophagus does not connect to the stomach.

Tetralogy of Fallot:

A congenital heart defect that encompasses three or four cardiovascular anatomical malformations (including pulmonary stenosis, aorta that connects to both ventricles, ventricular septal defect, and thickened right ventricular wall).

The Heart Center Staff



Rebecca K. Ameduri, M.D.
Pediatric Cardiologist
612-626-2710
amedu001@umn.edu



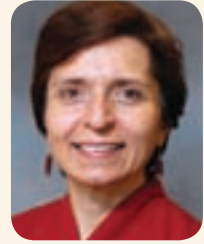
John Bass, M.D.
Pediatric Cardiologist
Co-director, The Heart Center
612-626-2755
bassx001@umn.edu



Elizabeth Braunlin, M.D., Ph.D.
Pediatric Cardiologist
Director, Heart Failure Center
Co-director, Pediatric Heart Transplant
612-626-2755
braun002@umn.edu



Roosevelt Bryant III, M.D.
Pediatric Cardiothoracic Surgeon
612-626-2755
rbryanti@umn.edu



Parvin Dorostkar, M.D.
Pediatric Critical Care Physician
Director, Pediatric Electrophysiology
612-626-2755
pcd@umn.edu



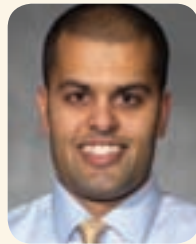
Ann Dunnigan, M.D.
Pediatric Cardiologist
651-626-2755
dunnigan@umn.edu



Caroline George, M.D.
Pediatric Critical Care Physician
cgeorge@umn.edu



Daniel Gruenstein, M.D.
Pediatric Cardiologist
Director, Interventional Cardiology
612-626-2755
gruen040@umn.edu



Sameer Gupta, M.D.
Pediatric Critical Care Physician
Pediatric Intensivist
612-626-2916
samgupta@umn.edu



Edward Kaplan, M.D.
Pediatric Cardiologist
612-624-1112
kapla001@umn.edu



Mindi Khan, M.P.H., R.D., L.D.
Pediatric Cardiology Dietician
Lipid Clinic Coordinator
612-626-3077
khan0137@umn.edu



Lazaros Kochilas, M.D.
Pediatric Cardiologist
Director, Pediatric Cardiac Care Consortium
612-626-2755
kochilas@umn.edu



Neil Kooy, M.D.
Pediatric Critical Care Physician
Director, Pediatric Critical Care and Pediatric Sedation Services
612-626-2970
neilkooy@umn.edu



Jamie Lohr, M.D.
Pediatric Cardiologist
612-626-2755
lohxr003@umn.edu **Ashley**



Ashley Loomis, M.D.
Pediatric Critical Care Physician
arloomis@umn.edu

The pediatric heart transplant team at University of Minnesota Amplatz Children's Hospital



Edward (Chip) Martin, M.D.
Pediatric Cardiologist
612-626-2755
martinc@centracare.com



Steve McDonald, R.N., C.P.N.P.
Acute Care Pediatric Nurse Practitioner
612-626-2755
smcdona2@fairview.org



James Moller, M.D.
Pediatric Cardiologist
Co-director, Adult Congenital Heart Disease and Cardiovascular Genetics Program
612-626-2790
molle002@umn.edu



Claire Passey, N.P.
Nurse Practitioner
612-626-2975
passe041@umn.edu



Lee Pyles, M.D.
Pediatric Cardiologist
612-626-2755
pyles001@umn.edu



Melissa Richardson, P.A.-C.
Certified Physician's Assistant
612-626-3242
mricha12@fairview.org



James St. Louis, M.D.
Pediatric Cardiothoracic Surgeon
Co-director, The Heart Center
612-625-3902
stlou012@umn.edu



Shanthi Sivanandam, M.D.
Pediatric Cardiologist
Director, Fetal Cardiology
612-626-2782
silv0099@umn.edu



Julia Steinberger, M.D., M.S.
Pediatric Cardiologist
Director, Pediatric Echocardiography
Director, Preventive Cardiology Program
612-626-2755
stein055@umn.edu

Not pictured

Arif Somani, M.D.
Pediatric Critical Care Physician
soman007@umn.edu

Conditions We Treat

- All congenital heart defects in neonates and children
- Murmurs
- Congestive heart failure/cardiac transplantation
- Cardiac arrhythmias
 - Heart block
 - Palpitations
 - Prolonged Q-T syndrome
 - Tachycardia/bradycardia
 - Wolf-Parkinson-White syndrome
 - Chest pain
- Fainting disorders
- Hyperlipidemia (elevated cholesterol)
- Adult congenital heart disease
- Acquired heart diseases
 - Cardiomyopathy
 - Endocarditis
 - Kawasaki disease
 - Myocarditis
 - Rheumatic fever

Diagnostic Technologies We Offer

- Cardiac CT/MRI
- Echocardiography
- Electrophysiology testing including EKG, Holter monitoring and event recorders
- Exercise testing
- Prenatal diagnosis and screening (including fetal echocardiography)
- Tilt-table testing

Treatments We Offer

- Cardiac surgery (complete range)
- Cardiac catheterization
- Nonsurgical transcatheter and minimally-invasive hybrid procedure for:
 - Balloon angioplasty
 - Balloon valvuloplasty
 - Catheter and hybrid closure of atrial and ventricular septal defects
- Coil occlusion of collateral vessels
- Hybrid for hypoplastic left heart syndrome (HLHS)
 - Patent ductus arteriosus occlusion
 - Stent procedures
- Electrophysiology studies including radiofrequency ablation and cryoablation of accessory pathways
- Placement of pacemakers, defibrillators and loop-event monitors
- Cardiac-assist devices
- Heart transplantation
- Specialized programs
 - Lipid Clinic
 - Preventive Cardiology Program
 - Adult Congenital Heart Disease and Cardiovascular Genetics Program



UNIVERSITY OF MINNESOTA
Amplatz Children's Hospital

888-KIDS-UMN (888-543-7866)

24-Hour Consultations
and Admissions

uofmchildrenshospital.org

For questions or comments about *The Heart Center Update*, contact Krista Olsen, editor, at 612-672-6626 or kolsen7@fairview.org. Contributing writers include Mariah Carroll Owens and Shanthy Sivanandam, M.D.

The Heart Center Update is published bi-annually.

Visit us online at uofmchildrenshospital.org.

© 2010 Fairview Health Services. SmartWorks 540213, Marketing 4247.

We strive to provide you with the best information to better serve you and your patients. Please complete this short survey to help us better communicate with you and receive a **complementary credit-card-sized flash drive.**

To take this survey online, please visit uofmchildrenshospital.org/survey. Respond by Aug. 31, 2010

1. During the past year, how many issues of *The Heart Center Update* did you read?

- 0 1-2 3-4

2. What factors, if any, have interfered with reading *The Heart Center Update*? Check all that apply.

- Limited interest in information
 Reading time, 8-12 minutes, is too great
 Heavy workload
 Other: _____

3. Which sections of *The Heart Center Update* do you read?

	Always read	Sometimes read	Never read
News	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Program/service features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Awards/honors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New staff profiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient stories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New Hospital Update	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Have you ever referred a patient to University of Minnesota Amplatz Children's Hospital because of information provided in *The Heart Center Update*?

- Yes No

5. What improvements to *The Heart Center Update* would you recommend?

Thank you for completing the survey!

[Customer name]

[Address 1]

[Address 2]

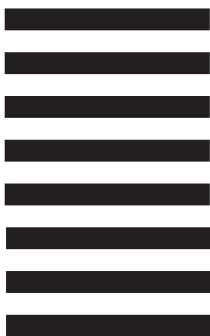
[City, State, Zip]

If you prefer to receive *The Heart Center Update* electronically, please provide your email:

E-mail _____

Reader survey

Receive a
complementary
**credit-card-sized
flash drive**
for completing
survey.



University of Minnesota Amplatz Children's Hospital
420 Delaware St. SE, MMC 126
Minneapolis, MN 55455

POSTAGE WILL BE PAID BY ADDRESSEE

FIRST-CLASS MAIL PERMIT NO 10816 MINNEAPOLIS MN

BUSINESS REPLY MAIL

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

