

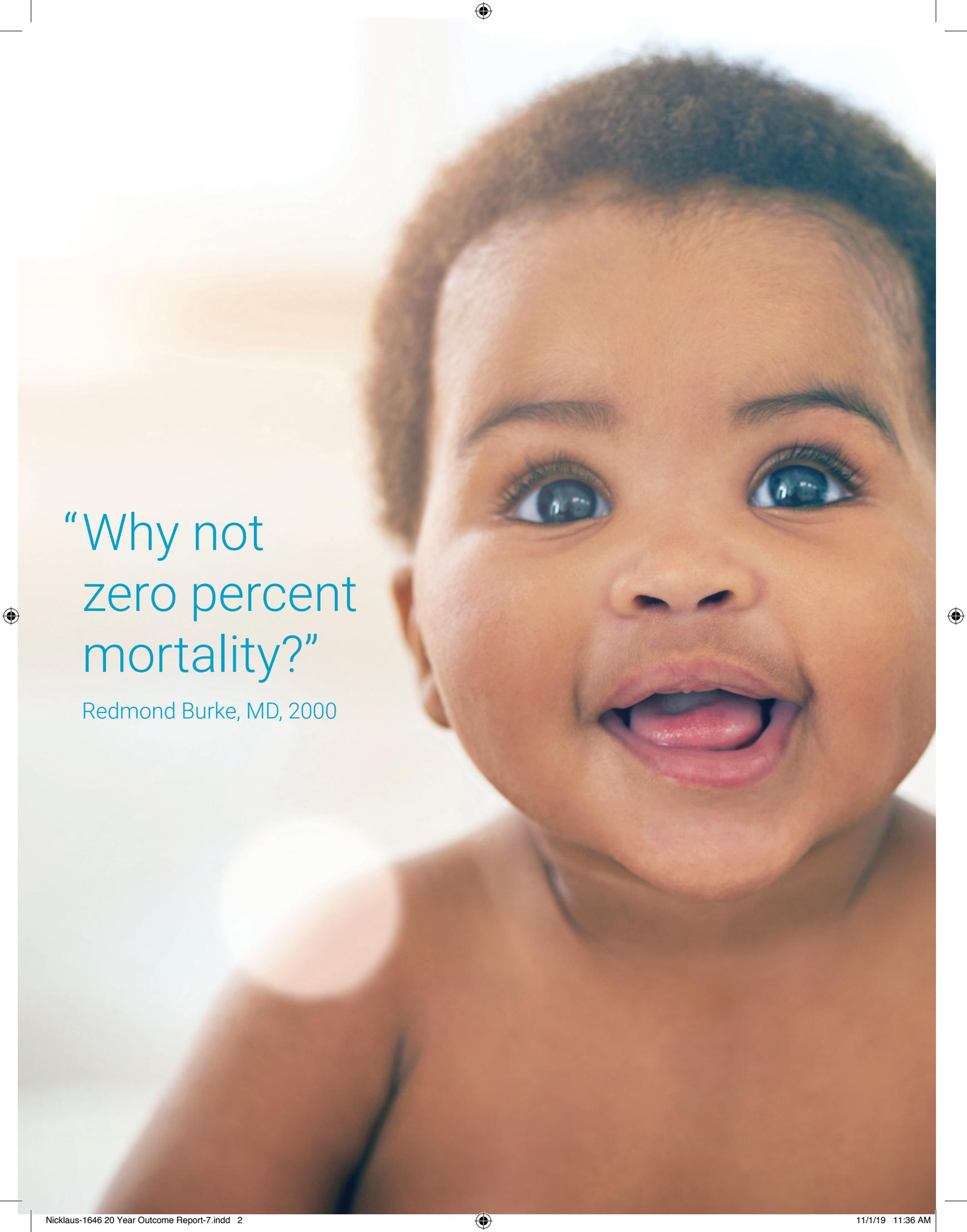
The Quest for Perfection

Cardiac Surgery at
Nicklaus Children's Hospital
1999-2018



**Nicklaus
Children's
Hospital**

HeartProgram



“Why not
zero percent
mortality?”

Redmond Burke, MD, 2000

Fall 2019

Dear Colleague,

The Heart Program at Nicklaus Children's is pleased to reflect upon more than 20 years of experience in saving little hearts. In addition to results from 2018 – in which we achieved our ultimate goal of 0 percent mortality – we share outcomes since 1999, soon after our current surgical and critical care leadership was onboarded.

Zero percent mortality is a mindset. A philosophy. An approach to all we do. We recognize that we are not perfect. Perfection will always be out of reach.

Yet, if one accepts that one of 33 children should die in or after heart surgery, then congenital heart surgery is like war, with a certain number of casualties deemed acceptable. We think the paradigm for heart surgery should mirror that of aviation. No plane crash is ever accepted, even if it is not possible to prevent all such tragedies.

We know that others across the nation share our passion. By conveying best practices through publishing and speaking, we all strive toward a vision of perfection. And although this aim is beyond our reach, it remains our overarching goal and commitment. Football legend Vince Lombardi said it best, **“Perfection is not attainable, but if we chase perfection we can catch excellence.”**

We hope you will take a moment to review our 20-year outcomes report and recent research pearls. We welcome any comments or feedback you may have on our shared journey to reach for perfection.



Anthony F Rossi, MD
Director, Division of Cardiovascular Medicine
PSA Chief, Section of Cardiovascular Medicine



Redmond P Burke, MD
Director, Division of Cardiovascular Surgery
PSA Chief, Section of Cardiovascular Surgery

Why choose us?

A Distinguished History

In the 1950s, Nicklaus Children's Hospital became the first facility in Florida to perform pediatric open-heart surgery. In 1995, the hospital recruited a top team of physicians and surgeons to advance the program's leadership. The Heart Program is widely recognized for innovation, clinical excellence and outcomes transparency, and has been routinely ranked among the nation's best for pediatric cardiology and heart surgery by *U.S. News & World Report* since 2008.

A Commitment to Outcomes Transparency

The Heart Program has a longstanding commitment to transparency in sharing clinical outcomes. In 2001, the program became the first in the nation to publish real-time clinical results online. Thus, outcomes reportable to the Society for Thoracic Surgeons are reported in real-time on the hospital's website. This level of transparency is reflective of our commitment to providing families and referring physicians with the most current data, including survival and length-of-stay results for all surgical procedures.

Largest Team in South Florida

The Heart Program team includes 34 physicians – including surgeons, cardiologists, cardiac interventionists, cardiac intensivists – as well as 16 nurse practitioners.

Comprehensive Network of Care

The Heart Program offers advanced imaging, congenital heart surgery and interventional services at its main campus near Coral Gables. Outpatient consults are available at the main campus as well as at outpatient centers located in Palm Beach, Broward and Miami-Dade counties.

Continuum of Care

The Heart Program encompasses a complete continuum of care that extends from fetal diagnosis to birth and care management from infancy, through childhood and adulthood. Specialized multidisciplinary clinical teams support patients with special needs.

Family Support

The Heart Program offers an outstanding network of support for patient families. From prenatal diagnosis, through birth and surgical or interventional care, families are part of a seamless system. The hospital's Cardiac Intensive Care Unit features private care rooms that include foldout double beds so that parents can spend the night in the unit with their child.



HeartProgram

nicklauschildrens.org/heart

Numbers Matter

Largest, Most Comprehensive
Team in South Florida

2

Pediatric Cardiac Surgeons

15

Pediatric Cardiologists

8

Cardiac Intensivists

4

Interventional Cardiologists

3

Pediatric Cardiac Surgery
Anesthesiologists

3

Noninvasive Imaging Physicians

13

Dedicated Nurse Practitioners

Volume and Reach

8,700

Surgeries since 1995

39

Countries

30

States

Our programs





Congenital Heart Surgery: This high-volume program, featuring two congenital cardiac surgeons, performs more than 270 surgeries annually. Outcomes consistently outperform national benchmarks.

Pediatric Cardiac Intensive Care: This 34-bed unit offers around-the-clock advanced care for newborns, children and adults with congenital heart disorders. The unit is staffed by a team of seven pediatric cardiac intensivists and 16 nurse practitioners.

Cardiac Anesthesia: A dedicated team of pediatric cardiac anesthesiologists offer comprehensive anesthesia services for babies, children and adults undergoing congenital heart procedures.

Pediatric Cardiac Catheterization and Interventional Program: A team of four interventional cardiologists perform more than 370 cases annually, including a full array of therapeutic and diagnostic procedures.

Pediatric Cardiac Non-Invasive Imaging: Echocardiography, cardiac MRI and CT services are provided to support assessment and management of newborns, children and adults with congenital heart disorders.

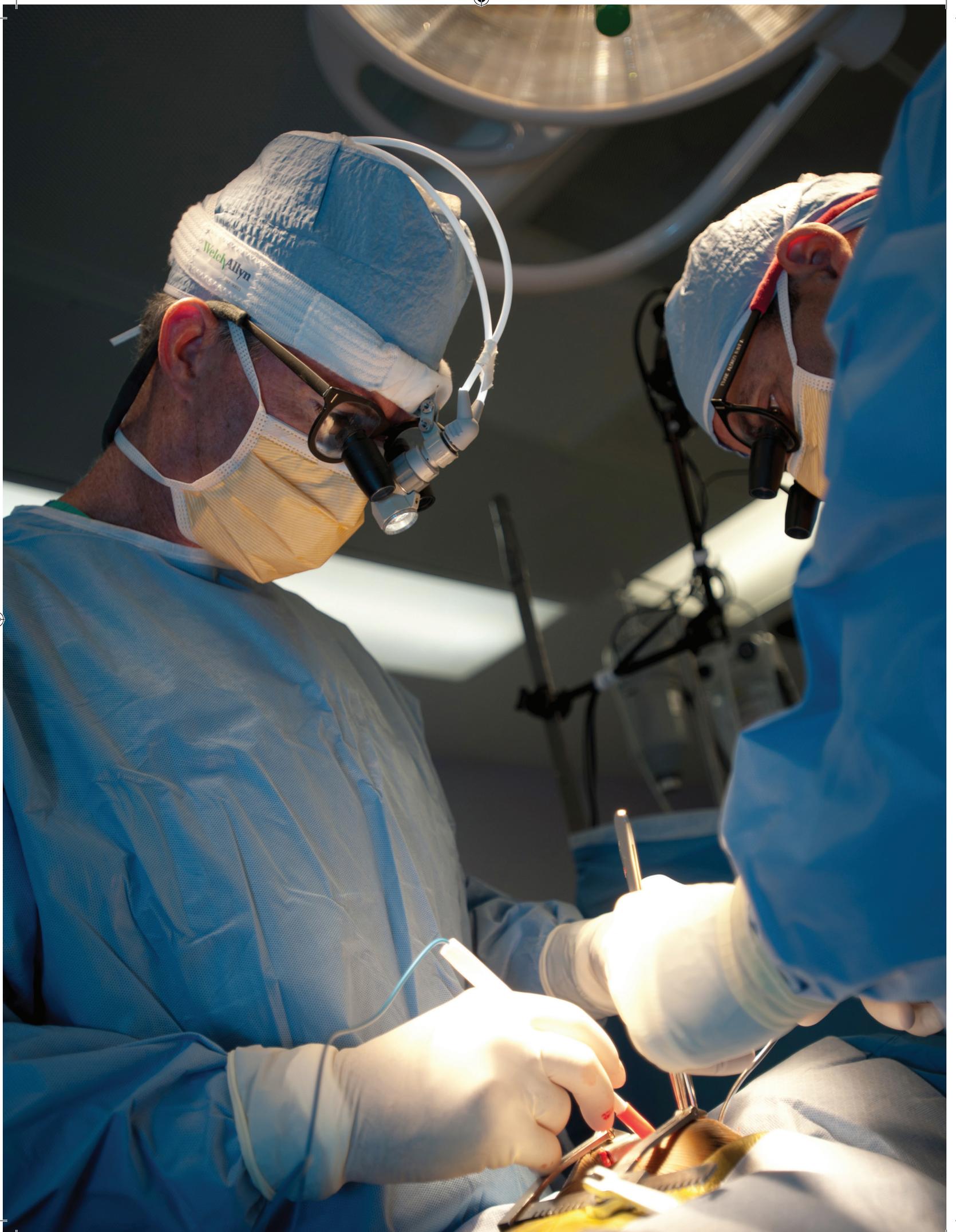
Pediatric Electrophysiology: The program performs more than 120 procedures annually to assess and correct arrhythmia in children and adults with congenital heart disorders.

Fetal Cardiology: The program aims to enhance care of congenital heart disease through prenatal or perinatal diagnosis, post-natal care and follow-up throughout the care continuum.

Fetal Care Center: This multidisciplinary center provides diagnostic and support services for newborns with congenital heart disorders and other anomalies. Healthy mothers of babies diagnosed with heart disorders give birth in the center's special delivery unit. This specialty unit ensures that babies can be readily transferred to the hospital's pediatric Cardiac Intensive Care Unit immediately after birth, and that families remain together in the same hospital during birth, recovery and transition to infant care.



NeuroCardiac and Development: A multidisciplinary team, comprised of cardiologists, neurologists, geneticists, dietitians and therapists, provides ongoing evaluation and intervention for children who underwent congenital heart surgery during the first six months of life.



Outpatient Cardiology: The program evaluates more than 8,000 patients annually, offering a full array of noninvasive studies, including electrocardiography, Doppler-flow, echocardiography, stress testing, holter and event recorder monitoring, and fetal and transesophageal echocardiography.

Adult Congenital Heart Services: The Heart Program manages care for more than 600 adults born with congenital heart defects. Many have been in the care of the Heart Program since birth. The adult program offers routine outpatient surveillance, advanced cardiac imaging, pregnancy care, diagnostic and interventional catheterization, arrhythmia management and congenital cardiac surgery.

Cardiometabolic Clinic: The clinic offers comprehensive cardiometabolic and lifestyle analysis to support children with metabolic syndrome, obesity, hyperlipidemia and hypertension.

Chromosome 22q Clinic: This clinic provides multidisciplinary assessment and management for children born with 22q deletion. The team includes clinical geneticists, genetic counselors, cardiologists, neurologists, psychologists and more.

LifeFlight Critical Care Transport: LifeFlight safely transports more than 3,000 children and infants to Nicklaus Children's Hospital annually via ground, helicopter and fixed-wing aircraft. Transports offer the most advanced life-support systems, including extracorporeal membrane oxygenation therapy. Services are provided 24 hours a day, 365 days per year.



3D Program: The hospital offers 3D imaging of patient hearts to support surgical planning. In addition to 3D onscreen imaging, the program was among the first to utilize 3D printed models of individual patient hearts to support education and surgical preparation.

Free EKG Program: Since the free EKG program was launched in 2011, Nicklaus Children's has provided more than 27,000 free screenings for children throughout South Florida. Through this initiative, the program has identified more than 900 abnormal EKGs and performed more than 20 corrective interventional procedures for children at risk of sudden cardiac death.



In 2018 there were no mortalities for children who underwent cardiac surgical procedures at Nicklaus Children's Hospital

According to the official STS data.

20 Years of Outcomes Data from Nicklaus Children's Hospital

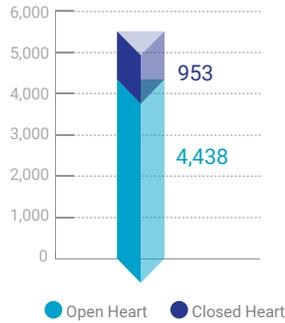
Category	# of Patients	Median Age	# of Mortalities	% Mortalities	STS Mortality	NCH Postop LOS	STS Postop LOS
Repair TOF	354	118 (d)	2	0.6%	1.2%	6	9-15
Bidirectional Glenn	335	178 (d)	7	2.0%	1.7%	7	12
Fontan	278	4.1 (y)	5	1.8%	1.2%	11	12
Norwood	203	6 (d)	33	16.0%	15.0%	19	34
Arterial Switch ASO/VSD	206	6 (d)	4	1.9%	3.3%	11	12-18
AV Canal Def	133	153 (d)	1	0.8%	1.8%	7	8

2018 Performance Analysis By Age

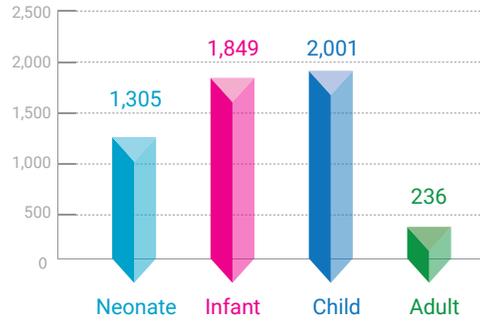
Category	# of Patients	# of Procedures	# of CPB	# of Non CPB	# of Mortalities	Procedure Mortality	STS Last 1 year mortality 1/2017--12/2017	STS Last 4 year mortality 1/2014--12/2017
Neonates	59	59	44	15	0	0.0%	7.4%	8.3%
Infants	85	86	72	14	0	0.0%	2.6%	2.8%
Children	111	112	96	16	0	0.0%	1.1%	1.0%
Adults	15	15	14	1	0	0.0%	1.3%	1.4%
Total	270	272	226	46	0	0.0%	2.8%	3.0%

20+ Years of Results

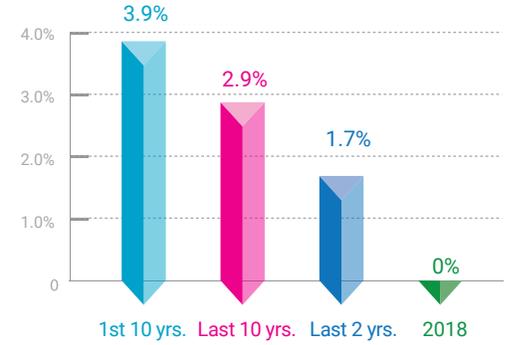
Cardiac Surgery: Open vs Closed Heart



Cardiac Surgical Cases by Patient Age

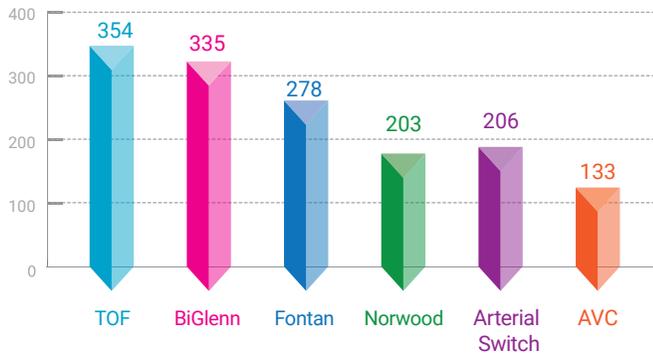


Cardiac Surgery Twenty Year Hospital

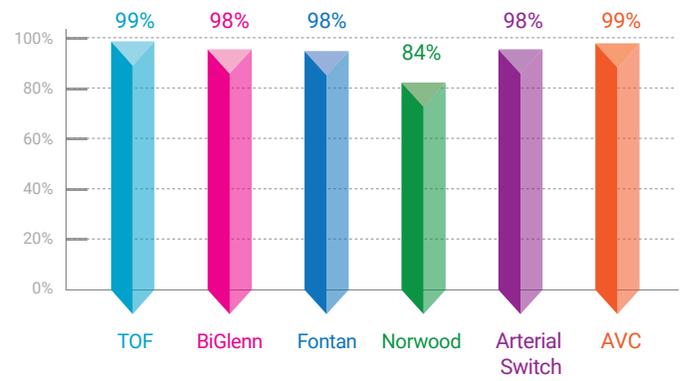


Spring 2019 STS Harvest: From Jan 2018-Dec 2018, NCH performed 345 Operations. There were zero mortalities.

Cardiac Surgical Indexed Cases by Number of Patients



Percent Survival after Indexed Cases



2018 Performance Analysis By Procedure

Category	# of Patients	Median Age in Days	# of Mortalities	% of Mortalities	STS Last 4 year mortality 1/2014 - 12/2017	Median length of Postop stay (days)	STS Median Postop stay (days)
VSD Repair	27	262	0	0.0%	0.5%	6	8
TOF Repair	16	91	0	0.0%	1.3%	8	11
Arterial Switch	7	6	0	0.0%	2.2%	8	17
Com. AV Canal Repair	5	147	0	0.0%	2.5%	11	17
Arterial Switch + VSD Repair	3	4	0	0.0%	4.6%	8	18
Fontan	22	1,388	0	0.0%	1.0%	12	13
Truncus Repair	3	6	0	0.0%	9.5%	8	28
Norwood	4	4	0	0.0%	15.0%	31	45

2018 Publications, Abstracts and Presentations

Publications

Franklin RCG, Béland MJ, Colan SD, Walters HL, Aiello VD, Anderson RH, Bailliard F, Boris JR, Cohen MS, Gaynor JW, Guleserian KJ, Houyel L, Jacobs ML, Juraszek AL, Krogmann ON, Kurosawa H, Lopez L, Maruszewski BJ, St Louis JD, Seslar SP, Srivastava S, Stellin G, Tchervenkov CI, Weinberg PM, Jacobs JP. Nomenclature for congenital and paediatric cardiac disease: the International Paediatric and Congenital Cardiac Code (IPCCC) and the Eleventh Iteration of the International Classification of Diseases (ICD-11). *Cardiol Young*. 2017 Dec;27(10):1872-1938.

Meza JM, Hickey E, McCrindle B, Blackstone E, Anderson B, Overman D, Kirklin JK, Karamlou T, Caldarone C, Kim R, DeCampi W, Jacobs M, Guleserian K, Jacobs JP, Jaquiss R; Congenital Heart Surgeons' Society Timing of S2P Working Group. The Optimal Timing of Stage-2-Palliation After the Norwood Operation. *Ann Thorac Surg*. 2018 Jan;105(1):193-199.

Conway J, Miera O, Adachi I, Maeda K, Egtesady P, Henderson HT, Guleserian K, Fan CS, Kirk R; Pediatric VAD Investigators. World-Wide Experience of a Durable Centrifugal Flow Pump in Pediatric Patients. *Semin Thorac Cardiovasc Surg*. 2018 Mar 15.

Enos J. MRI evaluation of left ventricular volume in children and adults during in-scanner exercise. *Journal of Biomedical Imaging and Bioengineering*. 2018 Jun 1;2(1):72-81.

Agarwal A, Lam S, Li H, Gorla SR, Sasaki N, Rusconi PG, Swaminathan S. (2018). Association of leftatrial pressure with left atrial volume and N-terminal prohormone brain natriuretic peptide in children with cardiomyopathy. *Cardiology in the Young* page 1 of 5.

Prieto LR. Outcomes After Device Closure of Atrial Septal Defect in Children: The Present Is Good, Is the Future Brighter? *JACC Cardiovasc Interv*. 2018 Apr 23;11(8):805-807.

Ryerson LM, Pharis S, Pockett C, Soni R, Fruitman D, Guleserian KJ, Nater M, Raynor SC, Mackie AS, Dicken B. Heterotaxy Syndrome and Intestinal Rotation Abnormalities. *Pediatrics*. 2018 Aug;142(2).

Nieves JA, Rudd NA, Dobrolet N. Home surveillance monitoring for high risk congenital heart newborns: Improving outcomes after single ventricle palliation why, how & results. *Progress in Pediatric Cardiology*. 2018 Jan 31.

Lopez L, Houyel L, Colan SD, Anderson RH, Béland MJ, Aiello VD, Bailliard F, Cohen MS, Jacobs JP, Kurosawa H, Sanders SP, Walters HL 3rd, Weinberg PM, Boris JR, Cook AC, Crucean A, Everett AD, Gaynor JW, Giroud J, Guleserian KJ, Hughes ML, Juraszek AL, Krogmann ON, Maruszewski BJ, St Louis JD, Seslar SP, Spicer DE, Srivastava S, Stellin G, Tchervenkov CI, Wang L, Franklin RCG. Classification of Ventricular Septal Defects for the Eleventh Iteration of the

International Classification of Diseases - Striving for Consensus: A report from the International Society for Nomenclature of Paediatric and Congenital Heart Disease. *Ann Thorac Surg*. 2018 Jul 19

Dubin AM, Jorgensen NW, Radbill AE, Bradley DJ, Silva JN, Tsao S, Kanter R, Tanel RE, Trivedi B, Young ML, Pflaumer A, McCormack J, Seslar SP. What have we learned in the last 20 years? A Comparison of a Modern Era Pediatric and Congenital Catheter Ablation Registry to Prior Pediatric Ablation Registries. *Heart Rhythm*. 2018 Aug 14.

Tirotta CF, Lagueruela RG, Madril D, Salyakina D, Wang W, Taylor T, Ojito J, Kubek K, Lim H, Hannan R, Burke R. Correlation Between ROTEM FIBTEM Maximum Clot Firmness and Fibrinogen Levels in Pediatric Cardiac Surgery Patients. *Clin Appl Thromb Hemost*. 2018 Dec 5.

Tandon A, Burkhardt BEU, Batsis M, Zellers TM, Velasco Forte MN, Valverde I, McMahan RP, Guleserian KJ, Greil GF, Hussain T. Sinus Venosus Defects: Anatomic Variants and Transcatheter Closure Feasibility Using Virtual Reality Planning. *JACC Cardiovasc Imaging*. 2018 Dec 6.

Steele J, Prieto L, Majdalany D, Stewart R, Najm H, El Yaman M. Congenital and Acquired Systemic Venous Anomalies: A Potpourri of Right to Left Shunts. *World J Pediatr Congenit Heart Surg*. 2018 Sep

Saarel EV, Law I, Berul CI, Ackerman MJ, Kanter RJ, Sanatani S, Cohen MI, Berger S, Fischbach PS, Burton DA, Dziura J, Brandt C, Simone L, Li F, Olshansky B, Cannom DS, Lampert R. Safety of Sports for Young Patients With Implantable Cardioverter-Defibrillators. *Circ Arrhythm Electrophysiol*. 2018 Nov;11(11):

Rao S, Suntharos P, Najm H, Komarlu R. Cor triatriatum dexter with right ventricular hypoplasia: Role of multimodality imaging in decision making. *Echocardiography*. 2018 Dec;35(12):2113-2116.

Abstracts

Wein CE, Patel M, Sasaki N, Zeidenweber CM, Weinberg PM, Guleserian KJ; Congenital absence of Coronary-cameral Fistulae from Right Ventricle. Poster presentation at Cardiology 2018. 21st annual updated on Pediatric and Congenital Cardiovascular Disease, Scottsdale, AZ February 21-25, 2018

Ybarra MA, Santana-Acosta D; Surgical management and outcomes of children with pulmonary atresia with ventricular septal defect and major aortopulmonary collaterals: out institutional experience. Poster presentation at Cardiology 2018. 21st annual updated on Pediatric and Congenital Cardiovascular Disease, Scottsdale, AZ February 21-25, 2018

Tirotta CF, Lagueruela RG, Madril D, Irizarry M, McBride J, Lobo; Air in

patient iv lines-fluid warmers, syringes and other clinical interventions that increase air burden for patients. Poster presentations at Congenital Cardiac Anesthesia Society and Pediatric anesthesiology annual meeting , Phoenix, AZ March 22 & March 23-25, 2018

Tirotta CF, Lagueruela RG, Madrill D, Salyakina D, Wang W, Taylor T, Ojito J, Lim H, Hannan R, Burke R; Interval changes in ROTEM values during cardiopulmonary bypass. Poster presentations at Congenital Cardiac Anesthesia Society and Pediatric anesthesiology annual meeting , Phoenix, AZ March 22 & March 23-25, 2018

Whalen R, Yenor J, Salvaggio J; Coming together: Multicenter collaboration to identify relevant measurements of nursing practice in congenital heart disease.: Nurse lead approach. Poster presentations at Florida Nurses Association conference (April 14 2018) and the Nursing Consortium in South Florida (April 20 2018)

Mehta KK. Cerebral abscess in left to right shunt. Oral presentation at the 16th annual world congress on pediatrics, NY March 21, 2018

Mehta KK. Utility of cardiac magnetic resonance for predicting suitability of native right ventricular outflow tract dimensions in patients undergoing attempted transcatheter pulmonary valve replacement. Oral presentation at The American college of cardiology Florida chapter conference. Young investigator award competition. Orlando, FL August 18, 2019.

Parikh K, Lopez L, Welch E, Muniz JC, Drossner D, Sasaki N: Rare occurrence of absent pulmonary valve syndrome in the setting of Double outlet right ventricle with unbalanced complete atrioventricular canal defect. Poster presentation Echo lab team; Poster presentation at the American Society of Echocardiography (ASE), Nashville, TN June 22-62, 2018

Vest M, Sasaki J. Neonatal patients with critical congenital heart defect and congenital diaphragmatic hernia between 2016-2017. Poster presentation at World Society for Pediatric and Congenital Heart Surgery (WSPCHS), Orlando FL July 23-26, 2018

Tirotta CF, Alcos S, Lagueruela RG, Madril D, Salyakina D, Wang W, Taylor T, Hughes J , Irizzary M, Ortiz G, Burke RP; Three-year Experience with Immediate extubation in pediatric patients after Congenital Cardiac Surgery" Presentation at European Society of Pediatric Anesthesia, Brussels, Belgium, September 2018. One of "Ten Best Abstracts".

Brown M, Nelson J, McCafferty J, Salyakina D, Jayakar P, Schain K, Diaz-Barbosa M, Totapally B, Sasaki J, Quittner A; Whole genome sequencing Parent-reported outcome measures. Poster presentation at American society of human genetics. San Diego, CA Oct 16-20, 2018

Gill K, Sasaki J. Fontan Playbook. Management strategy to improve postoperative outcomes after the Fontan operation. Poster presentation at Pediatric Cardiac Intensive Care Society (PCICS), Miami Beach FL Dec 13-16,2018

Sosa Tuesta L, Pasternack D, Tan VE, Reyes M, Sasaki J. Conjugated hyperbilirubinemia in neonates and infants after cardiac surgery. Poster presentation at Pediatric Cardiac Intensive Care Society (PCICS), Miami Beach FL Dec 13-16,2018

Girgis ST, Patel B. Heterotaxy with single ventricle physiology & liver failure from Alagille syndrome. Poster presentation for "Challenging cases" at Pediatric Cardiac Intensive Care Society (PCICS), Miami Beach FL Dec 13-16,2018

Halickman R, Mehta KK, Patel M. Intestinal obstruction and DIC in the setting of Mechanical valve. Poster presentation for "Challenging cases" at Pediatric Cardiac Intensive Care Society (PCICS), Miami Beach FL Dec 13-16,2018

Torres-Burgos I, Sasaki J. Beating the odds. Complications after arterial switch operation. Poster presentation for "Challenging cases" at Pediatric Cardiac Intensive Care Society (PCICS), Miami Beach FL Dec 13-16,2018

Pasternack D, Sasaki J, Katz J. The hidden danger of pleural effusions in the post-operative Fontan patient. Poster presentation for "Challenging cases" at Pediatric Cardiac Intensive Care Society (PCICS), Miami Beach FL Dec 13-16,2018

Conference hosted by Heart Program at Nicklaus Children's Hospital

"Sudden Cardiac Arrest in the Young" Miami FL. Feb 23-24, 2018.

Kristine Guleserian, MD (pro) and Redmond Burke, MD (con) " Pro Con debate : Children with an intramural RCA from the left sinus all require surgical intervention"

Ronald Kanter MD " Genetic diseases associated with sudden cardiac death : risk factors and prevention of sudden death : Brugada syndrome "

Melissa Olen ARNP " Drugs that exacerbate and drugs that palliate"

Sherrie Joy Baysa, MD " Channelopathy nightmare"

Anthony Rossi, MD " CHD nightmare"

Juan Carlos (JC) Muniz, MD " Sports participation by the patient with possible or definite disease : Imaging to guide recommendations"

American Society of extracorporeal technology (AmSECT) 2018 Pediatric perfusion conference. Miami FL Oct 4-6, 2018.

Jorge Ojito " Arrive at the Nicklaus Children's Hospital" " CPS at Nicklaus Children's Hospital" " ROTEM use on ECMO"

Anthony Rossi " Hospital Presentation " " Presentation of new pediatric hospital tower"

Hyunsoo Lim & Kat Kubes " Presentation of MCH pediatric

Robert Hannan " 3D heart model display" " 3D printer in action"

Christopher Tirota. " RiaSTAP and ROTEM use of CPB"

Redmond Burke " A silicon valley approach to congenital cardiac surgery"

Kristine Guleserian " Transplantation in the pediatric and adult congenital patient: pulmonary artery reconstruction and other advanced techniques.

Lourdes Prieto " Transcatheter valve replacement and adult congenital intervention"

Invited speaker

Juan Carlos (JC) Muniz, MD

- "Convention of Rhabdomyomas to myocardial fatty foci" at North American society for cardiovascular imaging (NASCI) Scientific sessions. San Antonio, TX. Oct 10, 2017
- " 3D rendering, printing and road mapping" 36th annual Baptist hospital Echo symposium, Miami FL. Oct 27-28, 2017.
- "The inevitable Problems in the pulmonary arteries:The distorted anatomy following the Lecompte Maneuver "World Society for Pediatric and Congenital Heart Surgery (WSPCHS), Orlando FL July 23-26, 2018
- "Multimodality Imaging and 3D Modeling in the management of Congenitally Corrected TGA" North American Society for Cardiovascular Imaging (NASCI). Charleston, SC. Sept 22-25, 2018.
- "3D modeling and enhanced reality for surgical intervention". American Society of Echocardiography (ASE), Nashville, TN June 22-26, 2018

Leo Lopez MD

- Pediatric Heart Network/ Presentation: Echo Z Score Update
- CHOP / Presentations: Intracardiac Shunts, Imaging Assessment of VSDs, Imaging Assessment of the Aortic Arch and Vascular Rings, Interesting VSD Case, Imaging Assessment of DORV, Interesting DORV Case and Imaging Assessment of Anomalous Cas
- Pediatric Cardiology BootCamp / Presentations: (Anatomy Stations) Atrial Anatomy, Situs , Basic Echo Interpretation, (ECHO, Auscultation) Neonatal ECHO Simulator
- NY Pediatric Echo Society/ Presentations: Quality Initiatives in Imaging

Lourdes Prieto, MD

- "Transcatheter Pulmonary Valve Replacement" Cardiovascular Research Technologies, Washington DC, March 2018
- "Pulmonary vein stenosis therapies in older patients" in Pulmonary vein stenosis, Mission Impossible session: panelist and speaker, Society for Cardiac Angiography and Interventions (SCAI), San Diego, April 2018

Juan Bolivar MD

- "Arritmias en la infancia" , "Muerte Súbita en el adolescente atleta. Se puede evitar?" , "Cuidados cardiovasculares en el postoperatorio", Congreso Nacional de Pediatría, Mexico, Mayo 3-6 2018

Christopher Tirota MD

- "Liposomal Bupivacaine: A novel long acting local anesthetic." 6th International Conference on Pain Management; Keynote Speaker. Vienna, Austria, March 26-28.
- "ROTEM and Human Fibrinogen Concentrate Use in Pediatric Cardiac Surgery", Congress on Pediatrics & Childhood Diseases, Valencia, Spain. April 23-25, 2018.
- "ROTEM and Human Fibrinogen Concentrate Use in Pediatric Cardiac Surgery", Cardiology Conference, Rome, Italy. July 23-24, 2018.
- "Liposomal Bupivacaine: A novel long acting local anesthetic." Conference on Pediatrics, Rome Italy. July 23-25, 2018.
- "Liposomal Bupivacaine: A novel long acting local anesthetic." 16th International Conference on Pharmaceutical Formulations, Rome, Italy. July 26-27, 2018.
- "Liposomal Bupivacaine: A novel long acting local anesthetic." 3rd Annual Nicklaus Children's Hospital Pediatric Nursing Conference. Miami, FL, September 26, 2018.
- "ROTEM and Human Fibrinogen Concentrate Use in Pediatric Cardiac Surgery", American Society of Extracorporeal Technology- Pediatric. Miami, FL. October 4-6, 2018.

Jorge Ojito

- Diseño e implementación de soporte circulatorio mecánico rápido "Nuestra experiencia de 20 años" , Asociación Latino Americana De Perfusion (ALAP) Bogota, Colombia. October 12, 2018

Invited speakers at The Nicklaus Children's Hospital 5th Annual Pediatric Critical Care Self-assessment May 17-20, 2018, Sunny Isles, FL

- Jason Katz "Cardiology Part 1"
- Jun Sasaki "Cardiology Part 2"
- Danyal Khan "Cardiology Part 3"
- Madalsa Patel "Cardiology Part 4"
- Darline Santana-Acosta "Technical procedures/monitoring"

2019 Publications, Abstracts and Presentations

Publications

Parikh K, Muniz JC, Lopez L, Welch E, Drossner D, Sasaki N. Rare Occurrence of Absent Pulmonary Valve Syndrome in the Setting of Double-Outlet Right Ventricle with Unbalanced Complete Atrioventricular Canal Defect. *CASE*. 2019 Jan 22.

Devlin PJ, McCrindle BW, Kirklín JK, Blackstone EH, DeCampi WM, Caldarone CA, Dodge-Khatami A, Eghtesady P, Meza JM, Gruber PJ, Guleserian KJ, Alsoufi B, Lambert LM, O'Brien JE Jr, Austin EH 3rd, Jacobs JP, Karamlou T. Intervention for arch obstruction after the Norwood procedure: Prevalence, associated factors, and practice variability. *J Thorac Cardiovasc Surg*. 2019 Feb;157(2):684-695.e8. doi: 10.1016/j.jtcvs.2018.09.130. Epub 2018 Nov 22. PubMed PMID: 30669228

St Louis JD, Timkovich N, Lenderman S, Jonas RA, Guleserian KJ, Tchervenkov CI, Jacobs JP, Austin EH, Plunkett MD, Myers JL, Hraska V, Sinha P, O'Brien JE Jr, Jacobs ML, Kirklín JK. The World Database for Pediatric and Congenital Heart Surgery "A Call to Service for North American Congenital Heart Surgery Programs". *Semin Thorac Cardiovasc Surg*. 2019 Jan 5. pii: S1043-0679(18)30319-8. doi: 10.1053/j.semtcvs.2019.01.002. [Epub ahead of print] PubMed PMID: 30616005.

Hiremath G, Qureshi AM, Prieto LR, Nagaraju L, Moore P, Bergersen L, Taggart NW, Meadows J. Balloon Angioplasty and Stenting for Unilateral Branch Pulmonary Artery Stenosis Improve Exertional Performance. *JACC Cardiovasc Interv*. 2019 Feb 11;12(3):289-297. doi: 10.1016/j.jcin.2018.11.042. PubMed PMID: 30732734.

Tirotta CF, Lagueruela RG, Salyakina D, Wang W, Taylor T, Ojito J, Kubek K, Lim H, Hannan R, Burke R. Interval changes in ROTEM values during cardiopulmonary bypass in pediatric cardiac surgery patients. *J Cardiothorac Surg*. 2019 Jul 22;14(1):139.

Abstracts

Wein CE, Cervantes L, Muniz JC, Sasaki N. Airway obstruction in patients with complex conotruncal anomalies. Poster presentation at annual scientific session, American College of Cardiology (ACC) New Orleans LA March 16-18, 2019

Gill K, Muniz JC, Sasaki N, Sasaki J, Sosa-Tuesta L, Welch E. Genetic abnormalities identified by chromosomal microarray in newborns with congenital heart disease. Poster presentation at annual scientific session, American College of Cardiology (ACC) New Orleans LA March 16-18, 2019

Mehta KK, Downing T, Sasaki N, Gruber J, Muniz JC. Utility of cardiac magnetic resonance for predicting suitability of native right ventricular outflow tract dimensions in patients undergoing attempted transcatheter pulmonary valve replacement. Poster presentation at annual scientific session, American College of Cardiology (ACC) New Orleans LA March 16-18, 2019

Mehta KK, Alarcon G, Burke RP, Rossi A. Unusual single ventricle palliation. Poster presentations at NeoHeart meeting, Huntington Beach CA March 27-29 2019

Alqahtani M, Mehta KK, Santana-Acosta D. Hypoplastic left heart syndrome with esophageal atresia and tracheoesophageal fistula. Poster presentations at NeoHeart meeting, Huntington Beach CA March 27-29 2019

Zonana-Amikie R, Mehta KK, Santana-Acosta D. Successful delayed single ventricle palliation following natural calamity. Poster presentations at NeoHeart meeting, Huntington Beach CA March 27-29 2019

Mehta KK, Welch E, Lopez L. It's wrap. Unusual total anomalous pulmonary venous connection. Poster presentations at North American Society of Cardiovascular Imaging Charleston SC September 22-25 2018.

Whalen R, Gonzalez JL, Jones A. Bringing it home. A hybrid approach to in-situ simulation and competency validation increases staff satisfaction. Poster presentation at South Florida Organization of Nurse Executive.

Rao S, Suntharos P, Wei L, Schoenhagen P, Worley S, Komarlu R. Role of Multimodality Imaging Prior to Balloon Sizing for Planned Percutaneous Pulmonary Valve Implantation. Poster session presented at: ACC.19: American College of Cardiology 68th Annual Scientific Session and Expo: 18 March 2019; New Orleans, LA

Rao S, Suntharos P, Prieto L, Worley S, Wei L, Schoenhagen P, Komarlu R. Correlation of Cardiac MRI Measurements With Balloon Sizing During Cardiac Catheterization Prior to Planned Percutaneous Pulmonary Valve Replacement. Poster session presented at: Society for Cardiovascular Magnetic Resonance 22nd Annual Scientific Sessions: 6 February 2019; Bellevue, WA

Duarte D, Prieto L, Sasaki J, Suntharos P. Cardiac catheterization during early postoperative Fontan completion in current era. Poster presentation at Society of cardiovascular angiography and interventions (SCAI). 2019 Scientific sessions. Las Vegas NV May 19-22, 2019

Parikh K, Fundora MP, Sasaki N, Sasaki J. Aortic arch dimensions in determination of surgical approach for aortic arch hypoplasia with coarctation. Oral and Poster presentations at American Society of Echocardiography (ASE) scientific sessions, Portland, OR June 21-25, 2019

Gill K, Lopez L, Taylor T, Muniz JC. Leftward and posterior deviation of atrial septum primum predicts morbidity in patients with hypoplastic left heart syndrome. Poster presentations at American Society of Echocardiography (ASE) scientific sessions, Portland, OR June 21-25, 2019

Invited talks

Melissa Olen.
"When syncope is a red flag. Not just a red herring." Heart Rhythm Society May 8-11 2019.

To discuss the needs of a prospective patient,
please call Oni Capote, Clinical Care Coordinator,
toll free at **844-NC-HEART** (844-624-3278)
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