

Innovations in Pediatrics



*Rady Children's - A comprehensive system
focused solely on children.*



PEOPLE

Dr. David Dimmock: Advancing rapid precision medicine



David Dimmock, M.D., a geneticist and senior medical director of [Rady Children's Institute for Genomic Medicine](#), is a nationally renowned expert on the clinical application of whole genome sequencing. At the institute, he leads the implementation of rapid whole genome sequencing for critically ill infants with undiagnosed conditions and is studying its application for newborn screening.

Dr. Dimmock spearheaded the first end-to-end solution (from patient care to clinical laboratory, data analysis, data return and ethical consideration) that was deployed in 2010 and is credited with the first use of exome sequencing to change the medical management of a child. He was involved in a case that became the subject of Pulitzer Prize-winning articles and the book "One in a Billion: The Story of Nic Volker and the

Dawn of Genomic Medicine."

Before joining the institute, Dr. Dimmock's clinical practice focused on the diagnosis of heritable disorders in children and adults, and the long-term care of patients with mitochondrial and metabolic disorders. He has been the principal investigator for multiple industry-sponsored studies evaluating novel therapeutics for these disorders and is a sought-after speaker at national conferences.



RECOGNITION

Orthopedics, Neonatology programs achieve top rankings

In its comprehensive survey to identify the top children's hospitals in the country, *U.S. News & World Report* ranked Rady Children's Hospital among the nation's top five children's hospitals in [orthopedics](#) and [neonatology](#) for 2017-18. The hospital also achieved rankings in all 10 specialties surveyed and improved its rankings in seven of the 10 specialties surveyed when compared to last year's results.

"At Rady Children's, we take great pride in providing the highest level of care across the full spectrum of pediatric medicine, from a teenager visiting an urgent care center for a broken bone to a newborn baby receiving advanced genomic sequencing to diagnose a mystery illness," says Rady Children's president and CEO Donald Kearns, M.D., M.M.M. "It's gratifying to know that *U.S. News* recognizes our enduring commitment to the health and well-being of the children in our community."

Rady
Children's
Hospital
San Diego



innovation
belongs in every moment



Rady Children's 2017-2018 Rankings	
Orthopedics	#3
Neonatology	#5
Neurology & Neurosurgery	#14
Diabetes & Endocrinology	#15
Cardiology & Heart Surgery	#17
Urology	#22
Cancer	#23
Nephrology	#25
Pulmonology	#26
Gastroenterology	#34

The "Best Children's Hospital" rankings recognize the top 50 pediatric facilities across the U.S. in 10 pediatric specialties, including cancer, cardiology and heart surgery, diabetes and endocrinology, gastroenterology and gastrointestinal surgery, neonatology, nephrology, neurology and neurosurgery, orthopedics, pulmonology and urology. They rely on clinical data and on an annual survey of pediatric specialists.

The rankings methodology considers clinical outcomes, such as mortality and infection rates, efficiency and coordination of care delivery and compliance with "best practices." Survival rates, adequacy of nurse staffing, procedure and patient volume, availability of programs for particular illnesses and conditions and much more can be viewed at <http://health.usnews.com/best-hospitals/pediatric-rankings>.

INNOVATIONS

Cardiology team first in world to perform novel procedure

Specialists from Rady Children's [Division of Cardiology](#) have performed the first-ever nonsurgical, catheter-only cavopulmonary anastomosis (joining two large blood vessels, the superior vena cava and the pulmonary artery) in a patient with single-ventricle congenital heart disease. The procedure presents a potentially viable alternative to open heart surgery for treating this condition.

The procedure was performed on a 35-year-old woman diagnosed with a functional single ventricle and very limited pulmonary blood flow. (Rady Children's has an [adult congenital heart disease \(ACHD\) program](#), with the only board-certified physicians in ACHD care in San Diego, Imperial and Riverside counties.) She was homebound due to labored breathing and worsening cyanosis, a bluish discoloration of the skin. Due to her condition, the physicians believed she was at high risk for surgery. As a result, they decided to use a transcatheter approach, performing the nonsurgical equivalent of the bidirectional Glenn operation.



3-D printed model of patient's heart (actual size)

PROGRAMS

New aerodigestive clinic offers expert, collaborative care

Earlier this year, Rady Children's Hospital-San Diego launched the multidisciplinary [Aerodigestive Clinic](#), bringing together specialists in gastroenterology, pulmonology, and otolaryngology to provide diagnosis and management of a variety of disorders involving the respiratory and digestive systems. These specialists are [Hayat Mousa, M.D.](#), from the [Division of Gastroenterology, Hepatology & Nutrition](#); [Daniel Lesser, M.D.](#), and [Annabelle Quizon, M.D.](#), from the [Division of Respiratory Medicine](#); and [Matthew Brigger, M.D., M.P.H.](#), from the [Division of Otolaryngology](#).

The conditions treated at the clinic include aspiration



syndrome, feeding difficulties, failure to thrive, genetic syndromes associated with airway and/or gastrointestinal morbidities, congenital airway abnormalities, chronic cough and recurrent pneumonia.

About 50 patients have been seen to date, with parents providing extremely positive feedback, especially regarding the collaborative care approach and ease of obtaining a treatment plan in one visit. Healthcare costs are also reduced by an efficient use of resources, performing procedures in a single visit and/or under a single anesthesia session.

Ongoing activities and upcoming plans include developing and refining clinic protocols, maintaining a patient registry/database that can provide resources for research questions, attending regional, national and international aerodigestive conferences, and including additional specialties in patient care, such as speech therapy, occupational therapy, radiology, surgery and anesthesia.

The clinic seeks to collaborate with other aerodigestive programs in California, such as those at Children's Hospital Los Angeles and Lucile Packard Children's Hospital

The team rehearsed the procedure step by step using contrast-enhanced cardiac computed tomography and a three-dimensional printed model of the patient's heart. Rady Children's is the first hospital in San Diego to have a [3-D Heart Modeling Program](#). The patient not only had a full and smooth recovery, but her symptoms improved after six months.

Many patients with congenital heart disease are born with one main pumping chamber, or a functional single ventricle, rather than the normal two-ventricle circulation. Infants born with a single ventricle require multiple open heart surgeries to relieve symptoms and stay alive. Rady Children's physicians believe that future advances in technology will simplify nonsurgical interventions for these patients.

An article on the case was published in the Aug. 8 issue of the *Journal of the American College of Cardiology*.

Stanford, particularly on research. Benchmarking will also be used to evaluate how the clinic compares to these programs.



Learn more at RCHSD.org