

represent a first step toward reducing unnecessary hospitalizations, and in turn promoting responsible healthcare resource utilization.

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## Structural Heart Disease

### Tetralogy, Transposition, and Truncus, Too?



The term “structural heart disease” entered the adult cardiology lexicon in 1999 and currently encompasses the base of knowledge and competencies surrounding noncoronary cardiac procedures such as transcatheter aortic valve replacement (TAVR), percutaneous mitral

repair, and left atrial appendage exclusion. We and others have detected an indiscriminant trend, however, to use the phrase “structural heart disease” (SHD) to include congenital heart disease (CHD). The recent editorial by Drs. Yadav, Halim, and Vavalle (1) in which the authors make an impassioned plea for improved adult SHD interventional training is a recent example, because throughout the paper, SHD and CHD are conflated. We wish to point out the important distinction between SHD and CHD in current vernacular, so as to avoid further sensed competition and to promote best patient outcomes across all cardiac specialties.

CHD is an important and distinct subset of SHD. First, it challenges clinicians with a combination of complex pathophysiology, anatomy, and natural and unnatural history that rarely is incorporated into traditional cardiovascular medicine training. Second, many types of CHD can be treated with a well-developed array of interventional transcatheter therapies that are unique to the field of CHD and that continue to evolve along their own distinct pathway outside of SHD. Indeed, percutaneous treatment of CHD is a mature specialty. Third, patients with CHD benefit from established clinical and training programs with dedicated focus on their complex CHD structural lesions. There is an entire body of knowledge in the field of pediatric and adult CHD (ACHD) that addresses congenital anatomy, pathophysiology, percutaneous and surgical palliation, and lifelong cardiovascular issues that span the spectrum of cardiovascular medicine (heart failure, arrhythmias, cardiopulmonary hemodynamics, valvular heart disease, aortic disease, peripheral and pulmonary vascular disease). Just as there is requisite competency in critical understanding of aortic valve anatomy, physiology, and indications for replacement before performing the TAVR procedure, CHD interventionalists must be fully competent in critical aspects of CHD before performing procedures. Finally, CHD is its own specialty and is recognized as such. The American College of Cardiology provides a professional home to its pediatric and ACHD care providers within the Adult Congenital and Pediatric Cardiology Section, founded in 2005. The American Board of Internal Medicine has established ACHD board certification, and the Accreditation Council for Graduate Medical Education is in the final stages of defining ACHD training requirements, which will require 24 months of fellowship training after general cardiology or pediatric cardiology, to be competent in the field of ACHD and to be board eligible for the certifying exam.

Therefore, for the sake of best care and outcomes for all our patients, we ask clinicians, authors, and editors

to make a careful distinction between SHD and CHD. For all of us who are deeply embedded in the interventional aspects of our cardiology specialties, we know that rich understanding of the short- and longer-term outcomes (risks and benefits) that accompany interventions (and that require substantive experience and expertise beyond any particular technical skillset) is paramount for optimal patient outcomes, patient-physician trust, and innovation. Therefore, we humbly suggest consideration of the term “non-congenital SHD” when cardiologists mean to refer to interventions, such as TAVR or percutaneous mitral repair, targeted at acquired cardiac disease. Regardless of terminology, it is important for all providers to recognize that CHD, in children and adults, represents an important set of cardiac diagnoses whose patients have been demonstrated to benefit greatly from well-developed clinical and educational programs focused on their specific disorders.

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## REPLY: Structural Heart Disease

Tetralogy, Transposition, and Truncus, Too?



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We thank Dr. Daniels and colleagues for reading our paper (1) with interest and highlighting several important points in their letter to the editor. We completely agree that structural heart disease (SHD) and congenital heart disease (CHD) are relatively distinct specialties, and each provide care to patients that have complex anatomy and physiology. However, we would like to acknowledge that there is some degree of overlap between SHD and CHD, and therefore, it would be difficult to draw lines separating the 2. For example, transcatheter aortic valve replacement is emerging as a good treatment option for patients with bicuspid aortic valve stenosis who are at high risk for surgery. This is a congenital

abnormality now being treated routinely by structural heart disease interventionalists, often without the assistance of adult congenital heart disease physicians. This is not the only example where structural heart disease interventionalists are now treating congenital heart disease. Other examples include patent foramen ovale, atrial septal defects, patent ductus arteriosus, coronary-cameral fistulas, and others. Hence, the proposed term “non-congenital SHD” may be misleading and not fully justifiable.

Certainly, congenital heart disease represents a full spectrum of disorders, and those mentioned in the preceding text are relatively simple defects that many non-CHD-trained physicians would feel comfortable treating. This is not to minimize the importance of the role for interventional CHD specialists, where their expertise is needed in the treatment of complex defects such as tetralogy of Fallot, transposition of the great arteries, and truncus arteriosus, among many others. Hence, adult congenital heart disease (ACHD) patients are best treated by dedicated specialists who understand these disease processes well and can provide invasive and non-invasive therapies as and when needed. As Daniels et al. pointed-out, ACHD has a dedicated fellowship track with an American Board of Internal Medicine board certification that can be pursued after general cardiology or pediatric cardiology and is its own specialty dedicated to the care of these patients.

It is time to tear down the silos within medicine and not build new ones. These complex patients require a team approach and the expertise of diversely trained specialists. We should capitalize on each other’s skill set and work within each other’s training limitations. We should move away from this sentiment of deciding which patients are “yours” and which are “mine.” They all belong to all of us. This is exactly what SHD has re-emphasized in our medical practice, more than ever before. Like Dr. Holmes and Dr. Mack commented in their response to our original letter, these complex procedures have helped in breaking some of the artificially erected silos between different specialties. Both structural and congenital heart disease could be considered as 2 ends of the spectrum, each with its own unique area of expertise, but with some common shared space; and for this space, working together will give our patients the best possible outcomes.

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