



## CAPE COD HEALTHCARE

Heart and Vascular Institute  
Structural Heart Disease

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Dear Colleague:

The field of Structural Heart Disease continues to evolve at an extremely rapid pace. The COVID-19 pandemic has impacted tremendously the manner in which we practice clinical medicine, perform clinical research and disseminate important information about advances in our fields. However, our dynamic field has been anything but stagnant both in the general sense and locally here at Cape Cod Hospital.

In December 2020, the long-awaited full revision of the ACC/AHA Guideline for the Management of Patients with Valvular Heart Disease was released. As you might imagine, this 173-page doctrine shifts many important paradigms towards less invasive catheter-based therapies for valvular disease. With these alternative strategies now available, two very important concepts are stressed throughout the Guidelines, those being the Multidisciplinary Heart Valve Team (MHT) working at a Comprehensive (Level 1) Valve Center and the Shared Decision Making (SDM) team to include members of the MHT, the primary care providers and perhaps most importantly the patient with his/her own wishes and concerns understood.

Over the past five-and one-half years, Cape Cod Hospital has assembled all of the Interventional/Surgical/Imaging and Institutional requirements to be considered a true Comprehensive Valve Center. The Multidisciplinary Heart Valve Team sees both inpatients and outpatients in consultative fashion stewarding them through the very difficult shared decision making process leading to the most appropriate therapies being offered and performed with extraordinary outcomes. An example of this is our Transcatheter Aortic Valve Replacement (TAVR) program. Hospitals performing TAVR must report outcomes data to the national TVT registry. The rolling 12-month report of mortality and major adverse outcomes with national comparison is provided below:

	<u>CCH</u>	<u>Registry</u>
Mortality (30day)	1.2%	1.9%
Stroke (30day)	0.6%	2.0%
Permanent Pacemaker	5.4%	9.6%
Disabling/Life Threatening Bleed	0.0%	1.9%

TAVR is approved for all risk groups (low to extreme) as well as for patients with Bicuspid aortic valve morphologies. This is not to say that TAVR is the only option that should be considered. Surgical aortic valve replacement remains an extremely effective and safe option for most patients with known long-term outcomes data that dwarfs what is available for all catheter-based valve technologies. Each and every patient must be considered as an individual based upon a thorough evaluation including advanced imaging

technologies and then an open discussion of options offered utilizing the Shared Decision Making model with the patient, family and Multidisciplinary Heart Valve Team.

With regards to Mitral Valve Insufficiency, the Guidelines appropriately distinguish between Primary Degenerative (disorder resulting from leaflet pathology) mitral regurgitation versus Secondary Functional (disorder resulting from ventricular pathology) mitral regurgitation. Surgical mitral valve repair remains the gold standard therapy for the patient with severe Primary (Degenerative) mitral valve regurgitation who is symptomatic, or asymptomatic and demonstrates a) LV systolic dysfunction or b) low surgical risk with high likelihood of successful repair. However, for patients with severe symptomatic Primary (Degenerative) mitral regurgitation who are deemed “high” or prohibitive risk for open surgery, transcatheter mitral valve repair (TMVr) with the MitraClip device now has a 2a (is reasonable with benefit >> risk) designation. A second major change in the Guidelines has resulted from the recent release of data from the COAPT trial of patients with severe symptomatic Secondary (Functional) mitral regurgitation already prescribed optimal guideline directed management and therapy (GDMT). For this large group of patients TMVr has a 2a designation with open surgical mitral valve strategies recommended only if the patient is primarily undergoing coronary artery bypass surgery. The Multidisciplinary Heart Valve Team utilizing advanced imaging diagnostics and the shared decision making model is deemed critical to the evaluation of these very challenging groups of patients. Catheter-based therapies cannot as of yet match the outcomes of open surgical repair and replacement, however for the appropriately selected patients the severity of MR can be reduced from severe/torrential to mild/moderate more than 80% of the time with dramatic improvement in symptomatology and reduction in mortality and repeat hospitalization.

In addition to the valvular procedures described above, balloon aortic and mitral valvuloplasty and transcatheter mitral valve replacement with the Edwards Sapien Valve is currently offered to appropriately selected patients. Patients with severe or torrential symptomatic tricuspid regurgitation either isolated or in combination with mitral valve disease are currently being considered for transcatheter therapy utilizing edge to edge repair with the Mitraclip device. On the horizon are new catheter-based options for the above valvular lesions as well as for transcatheter mitral and tricuspid annuloplasty, dedicated transcatheter aortic valve replacement for aortic insufficiency and transcatheter mitral valve replacement for calcific mitral stenosis and/or insufficiency.

Similarly great strides have been made in the cardiac surgical arena. In addition to providing and maintaining two decades of extraordinary success in coronary artery bypass grafting (CABG) and valvular surgeries, newer innovative therapies are now offered to patients as well. This includes options for minimally invasive mitral valve repair and replacement and the Convergent procedure to treat appropriately selected patients with atrial fibrillation (a procedure performed collaboratively between both cardiac surgeons and electrophysiologists.)

The Structural Heart Service continues to offer catheter-based left atrial appendage closure for the expanding population of patients with a history of atrial fibrillation, elevated risk of stroke and the inability to be prescribed long-term anticoagulation. The next generation Watchman device has recently received approval expanding the number of possible candidates for this procedure.

Consultation with the Structural Heart Service is also offered to adult patients with Patent Foramen Ovale and history of cerebrovascular accident, Atrial Septal Defect, Ventricular Septal Defect and closure of paravalvular leaks amenable to catheter based technologies.

A member of the Multidisciplinary Heart Valve Team and the Structural Heart Service is available 24/7 to discuss challenging patients. Literally hundreds of patients benefit from these innovative techniques being available on Cape Cod annually and this number will continue to grow dramatically as emerging technologies continue to become available. We look forward to participating with you in the care of this expanding and challenging group of patients.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Richard Zelman', written in a cursive style.

Richard Zelman, MD

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