



# TAVR Procedure Guideline

April 2017



BMC2

## Pre-Procedure Planning

Key Decisions	Additional Decisions	Details
<b>Valve Choice</b>	<ul style="list-style-type: none"> <li>• Balloon-expandable</li> <li>• Self-expanding</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Annulus, native valve and root anatomy/Ca++</li> <li>• Sheath size</li> <li>• Avoid rapid pacing when possible</li> </ul>
<b>Access Choice</b>	<ul style="list-style-type: none"> <li>• Transfemoral</li> <li>• Alternative access</li> </ul>	Suitability of access - careful reconstructions
<b>Location of Procedure</b>	<ul style="list-style-type: none"> <li>• Catheterization laboratory</li> <li>• Operating room</li> <li>• Hybrid room</li> </ul>	<ul style="list-style-type: none"> <li>• Imaging needed for procedure</li> <li>• Possible cardiopulmonary bypass</li> <li>• Interventional and surgical equipment</li> <li>• Anesthesia requirements</li> </ul>
<b>Anesthesia Considerations</b>	<ul style="list-style-type: none"> <li>• Conscious sedation</li> <li>• General anesthesia</li> <li>• Allergies</li> </ul>	Need for intraoperative TEE affects anesthesia type
<b>Anticipated Complication Management</b>	<ul style="list-style-type: none"> <li>• Individual team member roles</li> <li>• Difficult airway management</li> <li>• Patient-specific concerns (language or communication barriers)</li> <li>• Valve-related bailout strategies—valve-in-valve, surgical AVR</li> <li>• Need for leave-in PA catheter, temporary pacer post-implant</li> <li>• Prophylactic wiring of coronaries for low coronary heights and narrow sinuses/bulky leaflets</li> <li>• Vascular bailout strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Feasibility of fem-fem bypass</li> <li>• Bypass circuit primed or in-room only</li> <li>• Need for crossover balloon technique</li> <li>• Duration of temporary pacer per institutional protocol or patient condition</li> <li>• Conversion to permanent pacing may be needed in certain patients</li> </ul>

## Procedure Details

Decision Categories	Additional Decisions	Details
<b>Anesthesia Administration</b>	<ul style="list-style-type: none"> <li>• Moderation sedation or general anesthesia</li> <li>• Temporary pacer lead for rapid pacing</li> <li>• Defibrillator and pre-placed patches</li> <li>• Arterial pressure monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid hypothermia</li> <li>• Volume status monitoring and optimization</li> <li>• Antibiotic prophylaxis</li> </ul>
<b>Vascular Access and Closure</b>	<ul style="list-style-type: none"> <li>• Transfemoral</li> <li>• Transapical</li> <li>• Transaortic</li> <li>• Trans-subclavian</li> <li>• Other: Transcarotid, transcaval, antegrade aortic</li> </ul>	<ul style="list-style-type: none"> <li>• Percutaneous</li> <li>• Surgical cutdown</li> </ul>
<b>Pre-Valve Implant</b>	<ul style="list-style-type: none"> <li>• Optimal fluoroscopic and intra-procedural views for device deployment</li> <li>• Anticoagulation</li> <li>• Balloon pre-dilation (and sizing if necessary)</li> <li>• Valve prepared with delivery system for rapid deployment if needed (if balloon sizing not required)</li> </ul>	Assess AR immediately post-BAV as well as need for hemodynamic support
<b>Valve Delivery and Deployment</b>	<ul style="list-style-type: none"> <li>• Optimal positioning across the annulus</li> <li>• Need for rapid pacing</li> </ul>	Essential for balloon-expandable valve; optional for self-expanding valves
<b>Post-Deployment Valve Assessments</b>	<ul style="list-style-type: none"> <li>• Satisfactory device position/location</li> <li>• Valve embolization</li> <li>• Assess aortic regurgitation                             <ul style="list-style-type: none"> <li>▪ Central</li> <li>▪ Paravalvular</li> </ul> </li> <li>• Assess mitral valve</li> </ul>	<ul style="list-style-type: none"> <li>• Immediate assessment with echocardiography, hemodynamics, aortogram post-implant</li> <li>• See treatment options in “TAVR Procedural Complications and Management.”</li> </ul>

<b>Other Complications Assessment and Management</b>	<ul style="list-style-type: none"> <li>• Shock or hemodynamic collapse</li> <li>• Coronary occlusion</li> <li>• Annular rupture</li> <li>• Ventricular perforation</li> <li>• Complete heart block</li> <li>• Stroke</li> <li>• Bleeding/hemorrhage</li> <li>• Access site-related complications</li> </ul>	<p>See treatment options in “TAVR Procedural Complications and Management.”</p>
<p>2017 ACC Expert Consensus Decision Pathway for Transcatheter Aortic Valve Replacement in the Management of Adults With Aortic Stenosis A Report of the American College of Cardiology Task Force on Clinical Expert Consensus Documents Catherine M. Otto, MD, FACC, Co-Chair; Dharam J. Kumbhani, MD, SM, FACC, Co-Chair; Karen P. Alexander, MD, FACC; John H. Calhoun, MD, FACC; Milind Y. Desai, MD, FACC; Sanjay Kaul, MD, FACC; James C. Lee, MD; Carlos E. Ruiz, MD, PHD, FACC; Christina M. Vassileva, MD, FACC</p>		