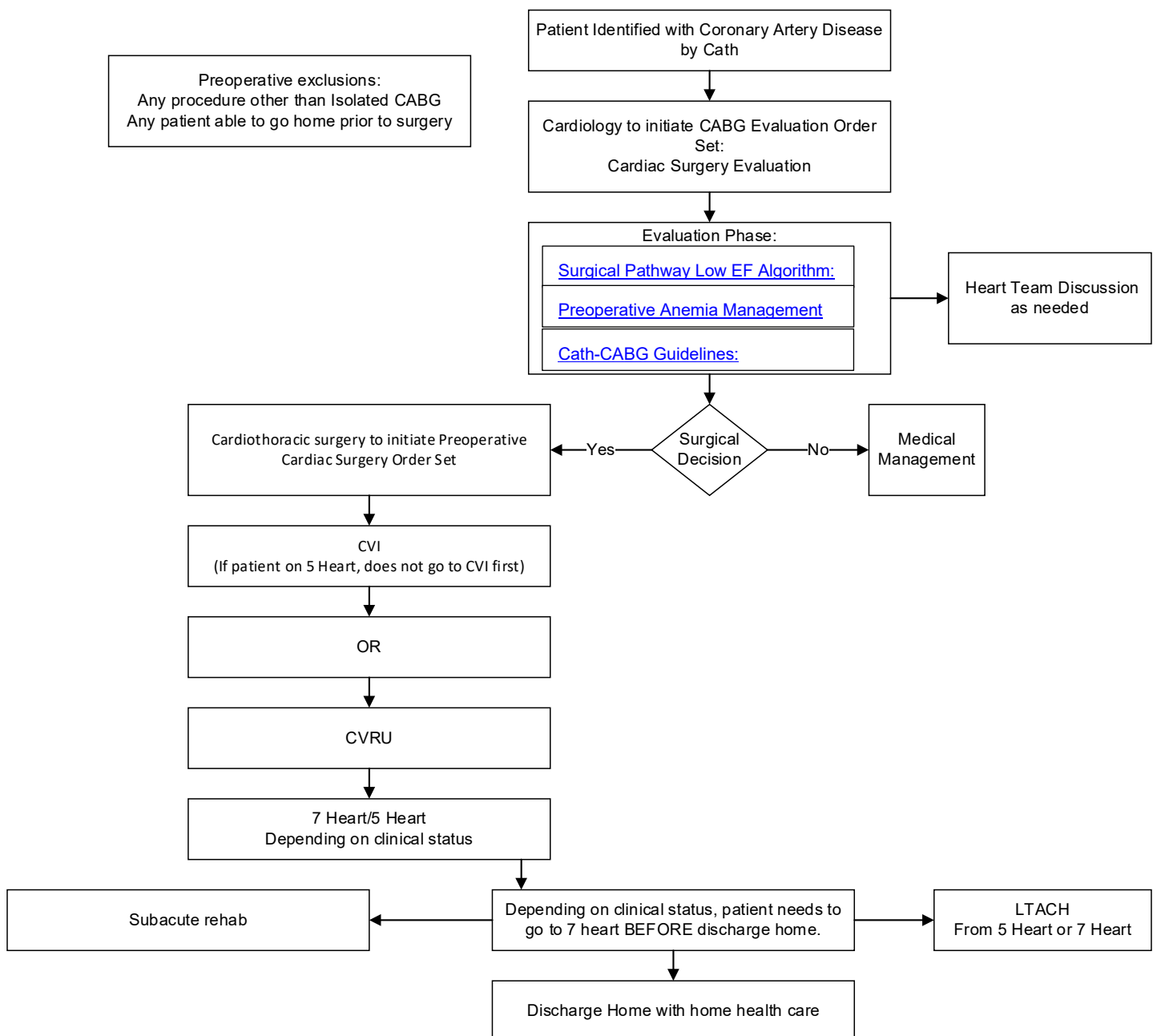


Clinical Pathway: Catheterization to Coronary Artery Bypass Graft (CABG), Inpatient

Updated: March 8, 2021

Clinical algorithm:



Clinical guideline summary

CLINICAL PATHWAY NAME: Catheterization to CABG, Inpatient, Clinical Pathway

PATIENT POPULATION AND DIAGNOSIS: Adult Inpatient with Coronary Artery Disease

APPLICABLE TO: Spectrum Health West Michigan

BRIEF DESCRIPTION: The Spectrum Health Cardiac Surgery program performs over 600 CABG surgeries annually; the highest volume in Michigan. Clinical pathways provide a means of implementing the most up-to-date guidance into the clinical setting to improve the value and efficiency of the care provided. As health care systems shift to a value-based care system, quality of care will have a direct impact on reimbursement and financial penalties. Governmental and commercial payers have increased the urgency for initiatives, interventions, and care models that will impact readmission rates and lower healthcare cost. Implementing best practices and promoting optimal care as recommended by American Heart Association and American College of Cardiology guidelines will help to reach our quality goals as a system when caring for heart failure patients.

Optimized Clinical Decision Support:

Cardiac Evaluation Order Set [30410001470]

Preoperative Cardiac Surgery order set [30410001156]

OVERSIGHT TEAM LEADER(S): Richard McNamara, MD., Stephane Leung, MD., Sarah Stillo, & Bree Stuk

OWNING EXPERT IMPROVEMENT TEAM (EIT): Cardiothoracic Surgery Expert Improvement Team

MANAGING CLINICAL PRACTICE COUNCIL (CPC): Cardiovascular Health Clinical Practice Council

CPC APPROVAL DATE: 3/8/2021

OTHER TEAM(S) IMPACTED (FOR EXAMPLE: CPCs, ANESTHESIA, NURSING, RADIOLOGY): Nursing, Pharmacy, Anesthesia, Operating Room, PT/OT, Care Management, Nursing Education, DGMS, Nephrology, Neurology, Radiology, Ultrasound, Lab, Surgical Optimization Center, Infection Prevention, Infectious Disease, Quality, Informatics, Non-Spectrum Health Cardiology Groups.

IMPLEMENTATION DATE: 3/10/2021

LAST REVISED: 3/8/2021

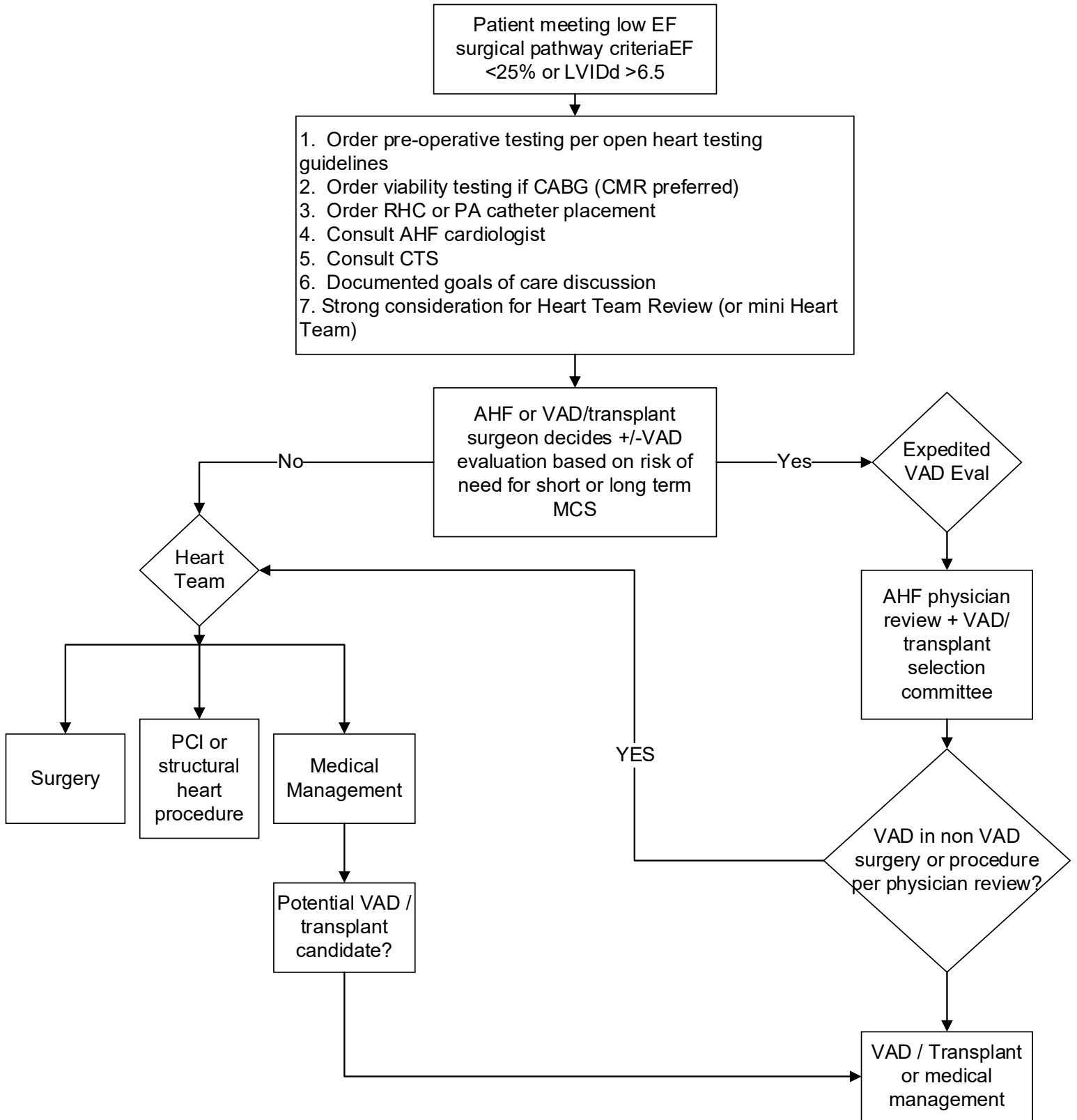
FOR MORE INFORMATION, CONTACT: Sarah Stillo, Bree Stuk

Clinical pathways clinical approach

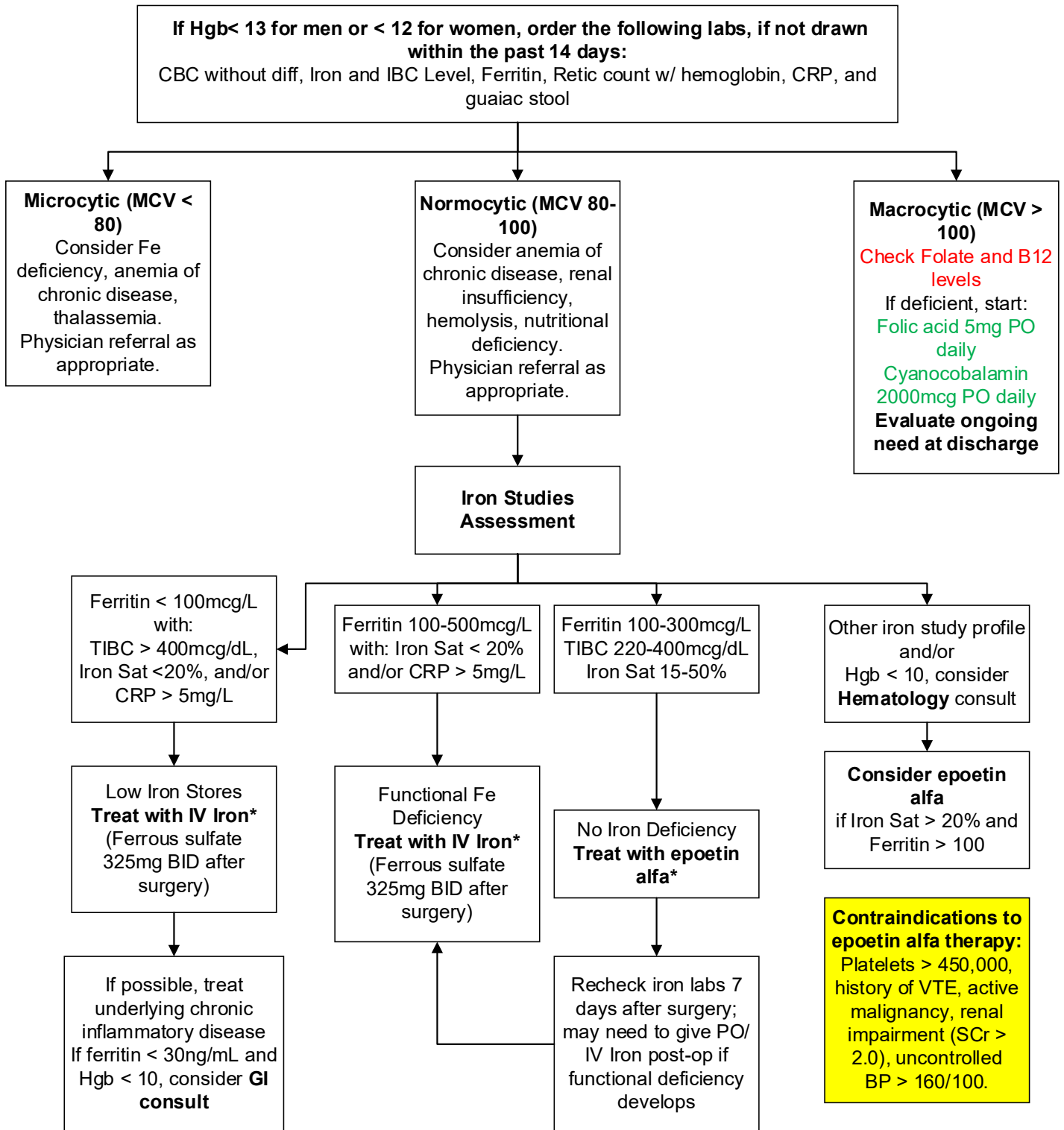
TREATMENT AND MANAGEMENT:

In alignment with the Society of Thoracic Surgeons, American Heart Association and American College of Cardiology, this care pathway will highlight best practices to support the management of CABG patients and standardize clinical decision making by clinicians. In turn, patients will receive comprehensive care in a timely manner during a hospital stay.

Surgical Pathway Low EF Algorithm:



Preoperative Anemia Management in Cardiovascular Patients:



Cath-CABG Guidelines:

Testing for ALL patients:

- CBC
- CMP
- PT/INR
- Hgb A1c- Diabetic management if Hgb A1c > 6.5
- Chest x-ray/lateral (if no prior in last 90 days)
- CV Echo complete (within last 6 months)
- Incentive spirometer instruction
- USV Carotid Duplex Bilateral *consult Vascular surgery if stenosis > 80% or symptomatic
- 5-meter walk
- Smoking cessation counseling

TEST TO BE PERFORMED	PATIENT POPULATION
CT Thorax without IV contrast	<ul style="list-style-type: none"> ▪ All patients EXCEPT: Re-do sternotomy or Moderate or severe Aortic Stenosis
Chest CT Angio Thorax with IV contrast Consider if renal function allows (GFR>60) and known patent LIMA to LAD	<ul style="list-style-type: none"> ▪ At discretion of surgeon
CT Angio Thorax Abdomen Pelvis with IV contrast (Indication: TAVR protocol)	<ul style="list-style-type: none"> • Moderate or severe Aortic Stenosis at discretion of surgeon
USV Vein Mapping Lower Extremity Duplex Bilateral	<ul style="list-style-type: none"> ▪ Morbid Obesity (large legs) ▪ Previous vein stripping ▪ Venous Stasis ▪ Previous SVG use ▪ Prior VTE ▪ Physical findings (significant varicosities, etc.)
CV Transesophageal Echo (if Transthoracic Echo Shows)	<ul style="list-style-type: none"> ▪ Moderate or Severe <ul style="list-style-type: none"> ○ Mitral Regurgitation ○ Mitral Stenosis ○ Aortic Insufficiency ▪ Severe Tricuspid Regurgitation ▪ Consider for Aortic Stenosis ▪ Moderate to severe or severe pulmonary hypertension RV enlargement
USV Radial Artery Duplex Bilateral	<ul style="list-style-type: none"> ▪ At discretion of surgeon
USV Arterial Physio ABI with Doppler Lower Extremity if	<ul style="list-style-type: none"> ▪ Prior lower extremity vascular surgery ▪ Claudication

TESTING RECOMMENDATIONS FOR SPECIFIC COMORBIDITIES

Lung Disease

Bedside Spirometry	<ul style="list-style-type: none"> ▪ COPD ▪ >30 pk yr. smoking history ▪ Use of inhaled bronchodilators ▪ Dyspnea w/ mild exertion
Pulmonary Function Testing (PFT) With ABG ** Consider Pulmonary Medicine consult if moderate or severe COPD	<ul style="list-style-type: none"> ▪ Chronic systemic steroid use ▪ Home O2 ▪ Results of bedside spirometry indicate: Moderate COPD FEV1 50-59% or Severe COPD FEV1 <50%

Other Heart Disease

Advanced Heart Failure Consult	<ul style="list-style-type: none"> ▪ EF < 25% ▪ Significant Diastolic Dysfunction: GR III or greater ▪ Double Valve surgery needed and EF <30%
Atrial Fibrillation Chronic vs. paroxysmal, persistent, long standing persistent and permanent	<ul style="list-style-type: none"> ▪ Consider LA exclusion with CHADSVasc score ≥ 2 ▪ Consider Maze procedure ▪ Consider Pulmonary Vein Isolation

Other Co-Morbid Conditions

Renal Disease eGFR < 45 Consult Nephrology if eGFR < 45	<ul style="list-style-type: none"> ▪ Urinalysis ▪ Urine spot protein/creatinine ▪ Phosphorus ▪ Renal Ultrasound – Reason: Evaluate size/symmetry of kidney; r/o obstruction (for pts with AKI or CKD)
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Anemia Hemoglobin < 13 for men <12 for women

Consult Gastroenterology if Hgb <10 and evidence of microcytic anemia or iron deficiency

Consult Hematology if Hgb <10 and no clear reason for anemia

- CRP
- Ferritin
- Iron and Iron Binding Capacity Level
- Reticulocyte count
- If MCV > 100, check Folate & B12
- Guaiac stools
- Start Iron, Epogen, Folate & Cyanocobalamin as directed in Preoperative Anemia Management Algorithm

MEDICATIONS:

- ASA 81 mg p.o. (for CABG only)
- Continue Beta Blocker
- Discontinue P2Y12 inhibitors**
- Ticagrelor (Brilinta) – 3-5 days before surgery
- Clopidogrel (Plavix) – 5-7 days before surgery
- Prasugrel (Effient) – 7 days before surgery

** Check Verify Now P2Y12 Assay if given any of the above

- Discontinue NSAIDS or COX2 inhibitors
- Discontinue ACE/ARBs 48hrs prior
- Hold OACs [Xarelto, Eliquis and Pradaxa]; Use bridging therapy as indicated per discussion w/ Cardiology

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