

Cardiovascular Update

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A newsletter from the BayCare Cardiovascular Service Line

Updates in Arrhythmia

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Atrial fibrillation (AF) is the most common cardiac arrhythmia in the United States, affecting 2.7 million to 6.1 million Americans. At the current rate of diagnosis, this number is expected to double by 2050 and accordingly has become an important target by the Centers of Medicare and Medicaid Services, as it is associated with significant morbidity and mortality. Inpatient facilities have

also taken notice, as the rate of hospitalization for AF-related encounters has increased by 34 percent from 1996 to 2001. The associated cost to the health care system has been estimated to range from \$6 billion to \$26 billion per year.

The ACC/AHA Task Force on Performance Measures has been charged with the duty of developing quality measures to help identify patients with atrial fibrillation as a way of promoting optimal disease management. While it may take time for these performance measures to be adopted in their entirety, they do provide the non-electrophysiologist a simple construct to manage patients with AF. Furthermore, AF quality measures will be a fundamental part of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), as well as the Merit-Based Incentive Payment System (MIPS), both selected as replacements for the Sustainable Growth Rate (SGR) formula. In keeping with these changes, BayCare Health System has elected to participate in the NCDR Atrial Fibrillation Ablation Registry as an attempt to ensure evidence-based practices in patients who ultimately undergo invasive management of AF using catheter-based ablation.

Performance measures (inpatient) include:

- CHA2DS2-VASc risk score documented prior to discharge
- Anticoagulation prescribed prior to discharge
- Prothrombin time (PT)/international normalized ratio (INR) planned follow up documented prior to discharge for warfarin treatment

Performance measures (outpatient) include:

- CHA2DS2-VASc risk score documented
- Anticoagulation prescribed
- Monthly INR for warfarin treatment

Quality measures (inpatient) include:

- Beta-blocker prescribed prior to discharge (when left ventricular ejection fraction [LVEF] <40)
- Angiotensin-converting enzyme inhibitor or angiotensin-receptor blocker prescribed prior to discharge (when LVEF <40)
- Inappropriate prescription of antiarrhythmic drugs prior to discharge to patients with permanent atrial fibrillation for rhythm control
- Inappropriate prescription of dofetilide or sotalol prior to discharge in patients with atrial fibrillation and end-stage kidney disease or on dialysis prior to discharge
- Inappropriate prescription of a direct thrombin or factor Xa inhibitor prior to discharge in patients with atrial fibrillation with a mechanical heart valve

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- Inappropriate prescription of a direct thrombin or factor Xa inhibitor (rivaroxaban or edoxaban) prior to discharge in patients with atrial fibrillation and end-stage kidney disease or on dialysis
- Inappropriate prescription of antiplatelet and oral anticoagulation therapy prior to discharge for patients who do not have coronary artery disease and/or vascular disease
- Inappropriate prescription of nondihydropyridine calcium channel antagonist prior to discharge in patients with reduced EF heart failure
- Patients who underwent atrial fibrillation catheter ablation who were not treated with anticoagulation therapy during or after a procedure
- Shared decision making between physician and patient in anticoagulation prescription

Quality measures (outpatient) include:

- Beta-blocker prescribed (when LVEF <40)
- Inappropriate prescription of antiarrhythmic drugs to patients with permanent atrial fibrillation for rhythm control outpatient patient safety
- Inappropriate prescription of dofetilide or sotalol in patients with atrial fibrillation and end-stage kidney disease or on dialysis
- Inappropriate prescription of a direct thrombin or factor Xa inhibitor in patients with atrial fibrillation with mechanical heart valve
- Inappropriate prescription of a direct thrombin or factor Xa inhibitor (rivaroxaban or edoxaban) in patients with atrial fibrillation and end-stage kidney disease or on dialysis
- Inappropriate prescription of antiplatelet and oral anticoagulation therapy for patients who do not have coronary artery disease and/or vascular disease
- Inappropriate prescription of nondihydropyridine calcium channel antagonist in patients with reduced EF heart failure
- Shared decision making between physician and patient in anticoagulation prescription

Ablative Therapy and Arrhythmia

Ventricular Arrhythmias

The Heart Rhythm Society had their annual meeting in May of this year. There were several trials presented with clinical implications in our management of arrhythmia. The VANISH trial showed that patients with ischemic cardiomyopathy and an implantable cardioverter defibrillator, who have persistent ventricular arrhythmia despite antiarrhythmic medications, had a lower risk for combined death, excessive ventricular tachycardia and appropriate ICD shock with ablation, versus escalating antiarrhythmics, suggesting that ablative therapy may be preferred in this patient population.

Persistent Atrial Fibrillation

In patients with symptomatic atrial fibrillation refractory to antiarrhythmics, pulmonary vein isolation remains the cornerstone in managing paroxysmal disease and bests antiarrhythmics in arrhythmia free survival. The optimal strategy in managing patients with persistent disease has remained unclear. Historically, patients with persistent disease required open-chest surgery; however, more recently hybrid ablation which employs both catheter-based and surgical techniques have been investigated. Two trials investigating hybrid ablation techniques are currently on going, including the CONVERGE IDE trial as well as DEEP AF (Dual Epicardial and Endocardial Procedure) trial, both using differing ablation systems that provide for minimally invasive routes as opposed to traditional open-heart surgery. The OASIS AF (Outcome of Different Ablation Strategies in Persistent and Long Standing Persistent AF) trial was also published showing pulmonary vein isolation with nonpulmonary vein triggers as a winning strategy over rotor mapping, a novel mapping technology requiring proprietary equipment, for those practitioners who manage persistent AF in the electrophysiology laboratory.



Convergent

Device Management of Arrhythmia

Bradyarrhythmias

The FDA has recently approved the MICRA pacemaker system after a prospective multicenter trial enrolling 300 patients and published in the *New England Journal of Medicine*. The novel pacemaker is the size of a nickel in the form of a bullet implanted directly to the right ventricular apical septum through a femoral venous sheath, and has the advantage of avoiding surgical incisions or patients who require continuous systemic anticoagulation. BayCare Health System was among the first to implant the device in the state.



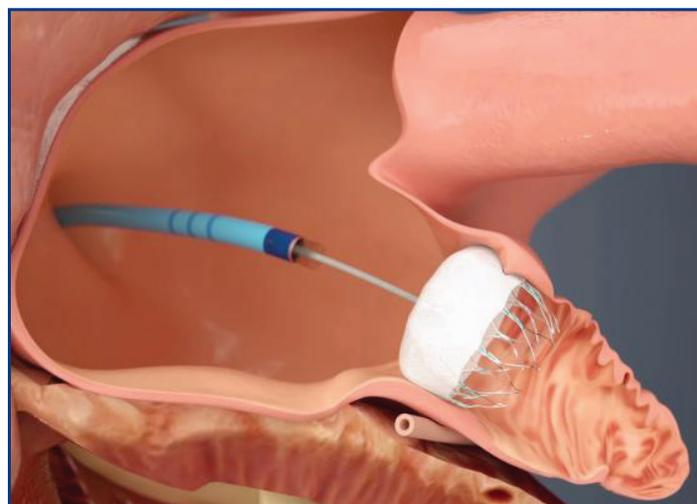
Micra

Tachyarrhythmias

The Department of Justice reached 70 settlements involving 457 hospitals in 43 states for more than \$250 million related to cardiac devices implanted in Medicare patients in violation of Medicare coverage requirements. BayCare was among the only health care systems to successfully avoid scrutiny by adhering to evidence-based practices of device implantation. All hospitals within the system participate in the NCDR ICD Registry and a periodic assessment of device indications will be employed system wide to ensure that devices are placed with appropriate indications.

Device-Based Stroke Prophylaxis

The FDA has approved the WATCHMAN device as a method of stroke reduction in high-risk patients with non-valvular AF. Historically, patients who could not tolerate long-term anticoagulation would have to rely on epicardial devices placed surgically or using epicardial sutures, or off-label transcatheter septal occlude devices. Initial indications by the FDA include patients with increased risk for stroke on the basis of stroke risk calculators, patients who can tolerate short-term anticoagulation, and have an appropriate rationale to seek non-pharmacologic alternatives to systemic anticoagulation. The approval was obtained on the basis of the PREVAIL trial and PROTECT AF. It was also gleaned from these trials of the need for appropriate operator experience necessitating closely scrutinized training programs substantiating the need for practitioners proficient in accessing the left atrium by transeptal puncture. Facilities are also required to enroll patients in a LAA registry to ensure ongoing safety and monitoring in keeping with the FDA's increasing scrutiny in the medical device industry. BayCare continues to evaluate the role of this potentially paradigm shifting and disruptive technology.



Watchman

Upcoming Conferences

Register today for two free upcoming cardiovascular conferences.

Saturday, September 17 | 7am-3pm

Atrial Fibrillation Symposium 2016

Renaissance Tampa International Plaza Hotel | Tampa, FL

To register: SJHCardioConference.org

Saturday, October 22 | 8am-2pm

Changing Frontiers in Cardiovascular Disease

Innisbrook Resort and Golf Club | Palm Harbor, FL

To register: MPMCardioConference.org

References

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- 2016 ACC/AHA Clinical Performance and Quality Measures for Adults With Atrial Fibrillation or Atrial Flutter *J Am Coll Cardiol*. 2016;68(5):525-568
- Ventricular Tachycardia Ablation versus Escalation of Antiarrhythmic Drugs *N Engl J Med* 2016; 375:111-121
- Impact of Rotor Ablation in Nonparoxysmal Atrial Fibrillation Patients *J Am Coll Cardiol*. 2016;68(3):274-282