Atrial Fibrillation Standardization

James Allred, MD, Ankit Nanavati, MD, Amber Seiler, NP, Donna Carroll, NP, Jackie Roh, Laurie Freeman, Kelly Peck, Sharyn Young, Ernest Dick, Sheryl Booth
Triad HealthCare Network and Cone Health

Introduction

Atrial Fibrillation (AF) is the most common arrhythmia, affecting more than 3 million Americans and is projected to increase to 16 million by the year 2050.1 In addition to being uncomfortable for the patient, AF is associated with a significant clinical morbidity. The Marshfield Epidemiology Study Area population showed a hazard ratio for mortality of 2.5 for 577 patients with AF over a mean 3.8 years of follow up. Thromboembolic stroke is the most serious complication associated with AF and strokes in patient with AF are associated with worse outcomes. AF almost triples the adverse events of heart failure (HF) outcomes. AF exacerbates the signs and symptoms of heart failure which is the most costly diagnosis in US healthcare2

Due to the fact that most patients with AF also have several other comorbid conditions, estimating the direct cost of AF is difficult. Determining when AF is the cause or effect of other costly conditions is not clear. However, when considering the cost of hospitalizations, testing, treatment, medications, and lost productivity for employers, the significant cost of AF in the healthcare community is undisputed.3

Triad HealthCare Network (THN) is a physician led accountable care organization encompassing Cone Health’s employed physicians, as well as broader independent provider community. In 2016, THN analyzed “Big Data” and determined the current state of AF noting that 4,113 patients with AF cost the network $77,793,822.00 with a mean cost per patient being $18,914.00. Only 15% of those AF patients had less than 3 other chronic conditions and 70% of the admissions were for AF.

AF patients are seen throughout the entire course at Moses Cone from Primary Care, Cardiology, ED, procedural areas, surgical centers, etc. There was little consistency with the diagnosis, referral pattern, treatment, and/or outcomes. Patients with primary diagnosis of AF were admitted to 12 different units and 85% of those admissions were for less than 72 hours.

As W. Edwards Deming said “uncontrolled variation is the enemy of quality”. This is true in most industries including healthcare. Cone Health and THN have recognized the relationship between reducing variation and improving cost and quality.4

The Medical Director of the Moses Cone AF program presented the large variation in AF care and the opportunities to standardize in order to improve outcomes. A multidisciplinary team was formed and invited to meet every other week.

Case Report

The team determined that if we could avoid the admission to the hospital while providing safe and quality care, much of the variety (and cost) would be eliminated. If appropriate care was delivered rapidly in the ED with follow up in outpatient setting within 72 hours then quality outcomes would improve while decreasing the variety of touches within the hospital and decreasing cost. In this scenario, the need for follow up with a specialized AF provider is necessary in order to assure all evidence based therapy and education is provided. Cone Health opened an Atrial Fibr Clinic for exactly this kind of access and care.

During a Kaizen event Cardiologists, ED Providers, Pharmacists and nurses examined the safety and effectiveness of the Ottawa Aggressive Protocol to perform ED cardioversion and discharge patients with recent onset atrial fibrillation and atrial flutter.5 After clinical discussion, several months of PDSA cycles, research and collaboration the below ED workflow was created.

Discussion

After targeted education, implementation of the dot phrase and consistent positive and/or encouraging feedback we were able to improve the documentation of CHADS2VASC score to greater than 85%, surpassing our original goal as well as compared to “all hospitals” within the AHA Get With the Guidelines registry.

The implemented ED workflow had ED providers and cardiologists collaborate to increase the number of patients who were rapidly discharged from the ED with either cardioversion or rate control and assure a 72 hour follow up in AF clinic. In 2018, Moses Cone ED rapidly discharged 305 patients. We know that 85% of AF patients were admitted prior to the implementation of Figure 2 process and if each admission cost $10,000.00 we have avoided at least $2.5M Data sharing is crucial to the continued success of this project, the multidisciplinary team continues to meet for 30 minutes each month. The data to be reviewed is emailed to each team member prior to the meeting and each opportunity is studied to determine appropriate action. For example, a cardioverted patient did not go to the AF clinic for follow up and research finds the patient had follow up with their cardiologist, no action is required. However if a patient was cardioverted and was discharged on the wrong drug, the physician and patient would be notified.

The team has expanded this project form the Moses Cone ED to other Cone Health facilities and will continue to expand to each of our associated ED.

Resources


Contact Info

Kelly.peck@conehealth.com
Laurie.freeman@conehealth.com

Acknowledgements

Thank you Dr. Allred and Dr. Nanavati for the clinical vision and leadership throughout this project.