

sentara nurse

Anticoagulation Therapy: Maximizing the Autonomy of the RN
in Targeted Patient Population Management
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Background

Sentara Healthcare is comprised of 12 hospitals, 7 extended care facilities, home care services and over 200 primary care and specialty care physician practices.

In 2012 two serious safety events occurred in less than one year within our healthcare system. One within a primary care practice, the other within an extended care facility. Both events were related to sub-therapeutic INRs.

- ❖ Anticoagulants are ranked as one of the medications most frequently associated with adverse events. According to the CDC anticoagulants (warfarin, dabigatran, edoxaban, rivaroxaban and apixaban) account for 17.6% of all ED visits for outpatient adverse drug effects.¹
 - ❖ Potential for harm can occur at sub-therapeutic and supra-therapeutic levels.
 - ❖ Many factors affect anticoagulation therapy: dosage, drug-drug interaction, food-drug interaction, comorbidities, patient compliance and patient knowledge.²
 - ❖ Management of anticoagulation patients within the physician practices was fragmented. Standardized processes and coordination of care were lacking throughout the healthcare system.

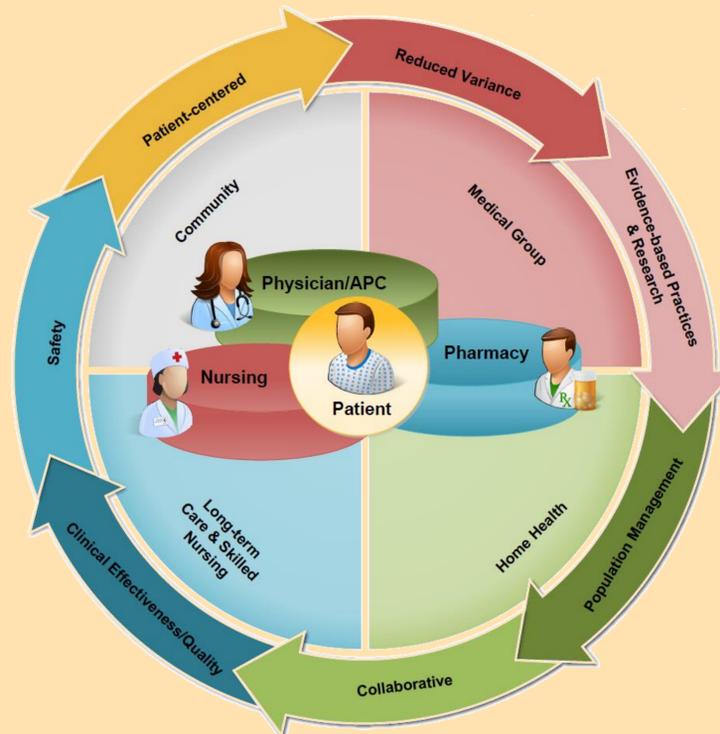
Objectives

The goal of this initiative was to standardize anticoagulation processes within the non-acute care venues of our healthcare system.

Areas of focus:

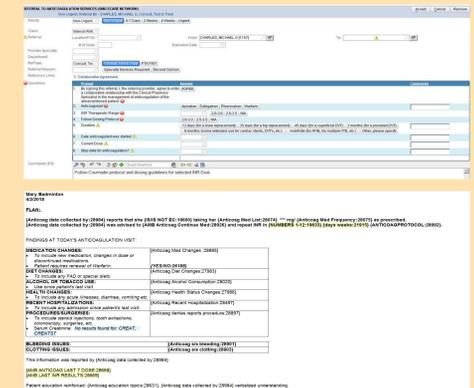
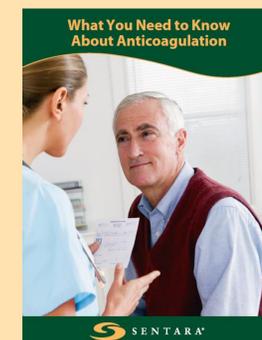
- ❖ Develop RN/Pharm D model for patient management
- ❖ Develop and implement anticoagulation protocols for warfarin and the direct-oral anticoagulation medications
- ❖ Provide staff education/training
- ❖ Provide patient/caregiver education
- ❖ Standardize documentation
- ❖ Improve patient safety and compliance

Guiding Principles



- ❖ Evidence-based Best Practice – Aligned with Sentara's goals caring for defined populations and improving health & safety.
- ❖ Patient Centered – Providing care to meet the needs of the patient by offering access to 18 clinics across Virginia and Northeast North Carolina.
- ❖ Collaborative – RN/Pharm D/Provider working across multiple healthcare venues.
- ❖ Optimization of Clinical Resources – RN/Pharm D model reduces provider workload enabling them to focus on other important areas of patient care.
- ❖ Reduction of Variance – Reduces risk of error and ultimately potential for error.
- ❖ Standardized Processes – Evidence based protocols, standardized patient education tools, standardized staff education and training, standardized documentation
- ❖ Safety – No serious safety events related to management by the Anticoagulation Clinic.

Tools for Success



Sentara Non-Acute Care Dosing Protocol: Warfarin (Coumadin) Chronic Therapy

Target INR Range 2.0 - 3.0

PATIENT INR	< 1.5	1.5 - 1.7	1.8 - 2.2	2.3 - 2.9	3.0 - 4.9	5.0 - 6.9	> 7.0
DOSE CHANGE	Increase warfarin by 2 levels	Increase warfarin by 1 level	No change (use INR Follow-Up Algorithm)	Decrease warfarin by 1 level	Hold 1 day and decrease warfarin by 2 levels	Hold 2 days and decrease warfarin by 2 levels	Notify pharmacist
INR	10 days	14 days	7-14 days	14 days	10 days	7 days	7 days

Sentara Non-Acute Care Selfing Warfarin Dosing Guidelines - 1 mg Tablet (Pink)

Current INR	1.5-1.7	1.8-2.2	2.3-2.9	3.0-4.9	5.0-6.9	> 7.0
1 mg Tablet	1	1	1	1	1	1
2 mg Tablet	1	1	1	1	1	1
3 mg Tablet	1	1	1	1	1	1
4 mg Tablet	1	1	1	1	1	1
5 mg Tablet	1	1	1	1	1	1
6 mg Tablet	1	1	1	1	1	1
7 mg Tablet	1	1	1	1	1	1
8 mg Tablet	1	1	1	1	1	1
9 mg Tablet	1	1	1	1	1	1
10 mg Tablet	1	1	1	1	1	1
11 mg Tablet	1	1	1	1	1	1
12 mg Tablet	1	1	1	1	1	1
13 mg Tablet	1	1	1	1	1	1
14 mg Tablet	1	1	1	1	1	1
15 mg Tablet	1	1	1	1	1	1
16 mg Tablet	1	1	1	1	1	1
17 mg Tablet	1	1	1	1	1	1
18 mg Tablet	1	1	1	1	1	1
19 mg Tablet	1	1	1	1	1	1
20 mg Tablet	1	1	1	1	1	1

Results

This RN/Pharm D model for managing anticoagulation adopted by Sentara Healthcare has improved patient outcomes and provided this patient population with a safe, timely, patient centered, and cost effective alternative to traditional outpatient anticoagulation management.

As RN/Pharm D anticoagulation services expand to include new regions, the program is actively engaged in process improvement at every level to ensure the model reflects current evidence based practices and is delivering the highest level of quality care.

2017 Data

- ❖ TTR 65.2%
- ❖ Face to Face Patient Encounters: 53,769
- ❖ Pharm D Consultations: 29,642
- ❖ Virtual Patient Encounters: 38,753

References

Institute for Safe Medication Practices. (2017, July 27). Part II: Oral anticoagulants - The nation's top risk of acute injury from drugs. *Quarter Watch*. Retrieved from <https://www.ismp.org>

Zhou, S., Sheng, X. Y., Xiang, Q., Wang, Z. N., Zhou, Y., & Cui, Y. M. (2016). Comparing the effectiveness of pharmacist-managed warfarin anticoagulation with other models: A systematic review and meta-analysis. *Journal of Clinical Pharmacy and Therapeutics*, 41, 602-611.