

Impact of a Centralized Anticoagulation Management Service on Patients Prescribed a Direct Oral Anticoagulant (DOAC) at a Physician Group Ambulatory Practice

The development and approval of direct oral anticoagulants (DOACs) has caused a paradigm shift from vitamin K antagonists (warfarin) to DOACs in treatment guidelines and in anticoagulant global prescribing patterns^{1,2}. Despite several practical, efficacy, and safety advantages of DOACs compared to warfarin, anticoagulants as a class remain responsible for more emergency department visits due to adverse events than any other class of therapeutic medications³. In a review of the FDA adverse event reporting system, Quarter Watch reported an “unacceptably” high risk of oral anticoagulant drugs led by rivaroxaban⁴.

Anticoagulant Management Services (AMS) have been shown to reduce rates of poor clinical outcomes in patients receiving warfarin, but the benefits for patients prescribed DOACs are less clear⁵. However, DOAC adherence has shown to be a key surrogate outcome. In atrial fibrillation patients, the hazard ratio for all-cause mortality and stroke increased by 13% for every 10% decrease in dabigatran adherence (as measured as proportion of days covered)⁶. A Veterans Association study showed that sites with AMS involvement in DOAC management were more likely to be a high-performing site measured by DOAC patient adherence⁷. This has led to organizations such as the Anticoagulation Forum and the Institute for Safe Medication Practices to recommend systematic follow up for patients prescribed DOACs.

Atrius Health is a multi-site, ambulatory primary care and specialty organization with a centralized AMS. Under the direction of the clinical pharmacy department, the AMS is staffed by nurses and clinical pharmacists who have historically offered comprehensive anticoagulation management to patients prescribed warfarin. In April 2019, Atrius Health AMS was awarded a grant to help fund a centralized DOAC management program. The program aim was to reduce medication mismanagement and safety events through systematic, guideline-driven management of patients prescribed DOACs. As part of this project, AMS created and implemented practice guidelines, developed education materials for staff and patients, redesigned our staffing model, built reporting systems, and developed disease management tools within our electronic health record to support systematic follow up of patients prescribed DOACs.

Atrius Health AMS began systematically enrolling patients prescribed DOACs at our pilot sites in August 2019. Prior to enrollment of these patients, clinical issues with the patient’s antithrombotic care are reviewed with the primary care clinician and corrected as needed. Frequency of AMS longitudinal follow ups are primarily based on the patient’s start date and creatinine clearance, unless specific interventions are required as part of routine care (i.e., periprocedural management, drug-drug interactions, transitions of care, management of bleeding and clotting events).

This poster presentation describes interim findings from the implementation of the DOAC management program at Atrius Health. This includes clinical issues with DOAC management found at the time of AMS enrollment (Usual Care) and an analysis of clinical issues after AMS follow up (AMS Care) at our pilot sites. We also describe adherence rates as a key surrogate outcome for DOAC management for patients prescribed DOACs within the Usual Care and AMS Care populations. We hypothesize that centralized management of DOACs will improve patient care through improved patient selection, more accurate

dosing, systematic follow up to ensure safe and effective therapy, guideline driven periprocedural management. and prompt transitions of care.

References

1. Huisman MV, Rothman KJ, Paquette M, et al. The Changing Landscape for Stroke Prevention in AF: Findings From the GLORIA-AF Registry Phase 2. *J Am Coll Cardiol*. 2017;69(7):777-785. doi:10.1016/j.jacc.2016.11.061
2. Kearon C, Akl EA, Ornelas J, et al. Antithrombotic Therapy for VTE Disease: CHEST Guideline and Expert Panel Report [published correction appears in *Chest*. 2016 Oct;150(4):988]. *Chest*. 2016;149(2):315-352.
3. Shehab N, Lovegrove MC, Geller AI, Rose KO, Weidle NJ, Budnitz DS. US Emergency Department Visits for Outpatient Adverse Drug Events, 2013-2014. *JAMA*.
4. Moore T, Cohen M, Furberg C. Quarter W (2016) Quarter 4. 2017. https://www.ismp.org/sites/default/files/attachments/2018-01/2016Q4_1.pdf
5. Rudd KM, Dier JG. Comparison of two different models of anticoagulation management services with usual medical care. *Pharmacotherapy*. 2010;30(4):330-338.
6. Shore S, Carey EP, Turakhia MP, et al. Adherence to dabigatran therapy and longitudinal patient outcomes: insights from the veterans health administration. *Am Heart J*. 2014;167(6):810-817.
7. Shore S, Ho PM, Lambert-Kerzner A, et al. Site-level variation in and practices associated with dabigatran adherence. *JAMA*. 2015;313(14):1443-1450.