Improving Anticoagulation Stewardship
Using Population Health-Based Digital Tools

Anticoagulation FORUM
www.acforum.org

Rationale for Anticoagulation Stewardship

Anticoagulants (AC) are life-saving therapies for individuals with cardiac and vascular disorders. Anticoagulants **reduce the risk of stroke** in patients with atrial fibrillation by as much as **62%**[1] and **reduce the risk of pulmonary embolism and recurrence** in patients with venous thromboembolism (VTE).[2]

Anticoagulation Stewardship is defined as coordinated, efficient, and sustainable system-level initiatives designed to achieve optimal anticoagulant-related health outcomes and minimize the **problem** of avoidable adverse drug events (ADEs).[3]

The Problem is Common

Anticoagulants are the **#1** drug class associated with **ADEs,** accounting for **21.5%** of ADE-related emergency department (ED) visits[4,5] and over **1.2 million** ED visits within a 5-year period.[6]

The Problem is Serious

80% of ADE-related ED visits occur in patients **≥ 65 years** old.[6]

Nearly **50%** of all ADE-related visits **require hospitalization**.[6]

Unintended variations in care contribute to avoidable thromboembolic or bleeding events.[7-11]

The Problem Demands Action

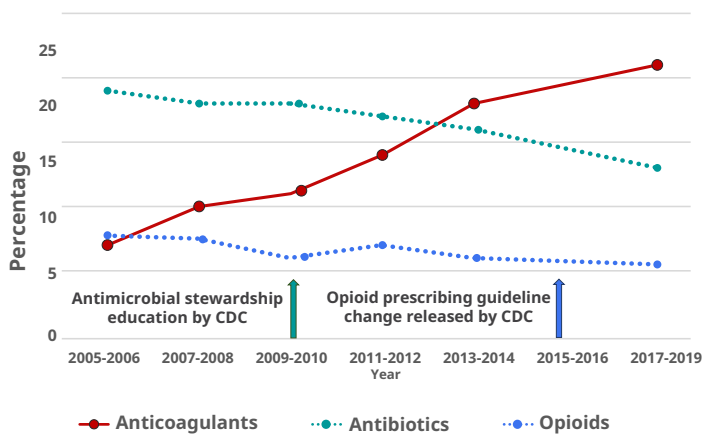
Use of oral anticoagulants (OACs) has **increased by 70%** over the past decade and **will continue to rise** due to demographic factors and expanded indications for OACs.[12,13]

Many organizations have recognized the need for a **systematic approach to improve the quality and safety** of AC management.[14-17]

> **...Partners should lead efforts to promote the concept of 'anticoagulation stewardship' to reduce anticoagulant ADE burden.**
> – US Department of Health and Human Services' National Action Plan for Adverse Drug Event Prevention[17]

With the need to improve care processes for the **growing number of patients utilizing direct oral anticoagulants (DOACs)** while simultaneously faced with **limited resources** to achieve these goals, innovative health systems are **leveraging digital tools** such as electronic health record (EHR)-based "dashboards" to better monitor and manage populations of patients on OACs while **generating operational efficiencies**.[18-23]

National Estimates of US ED Visits for Adverse Drug Events (% of Identified ADEs)



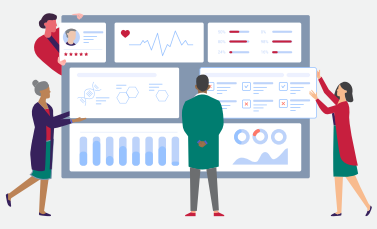
Anticoagulation Stewardship can reverse the trajectory of OAC ADE-related ED visits.[4]

What is a Population Health-Based Digital Tool?

Key characteristics of a population health-based digital tool[24]:

- **Interfaces** with electronic health record
- **Evaluates** patient data against clinical standards
- **Interactive** interface for monitoring of multiple patients
- **Alerts** clinicians regarding cases potentially requiring intervention
- **Tracks and reports** metrics of safety and quality of care

The Anticoagulation Forum considers Population Health Management Dashboards to be an advantageous care model for Anticoagulation Stewardship.

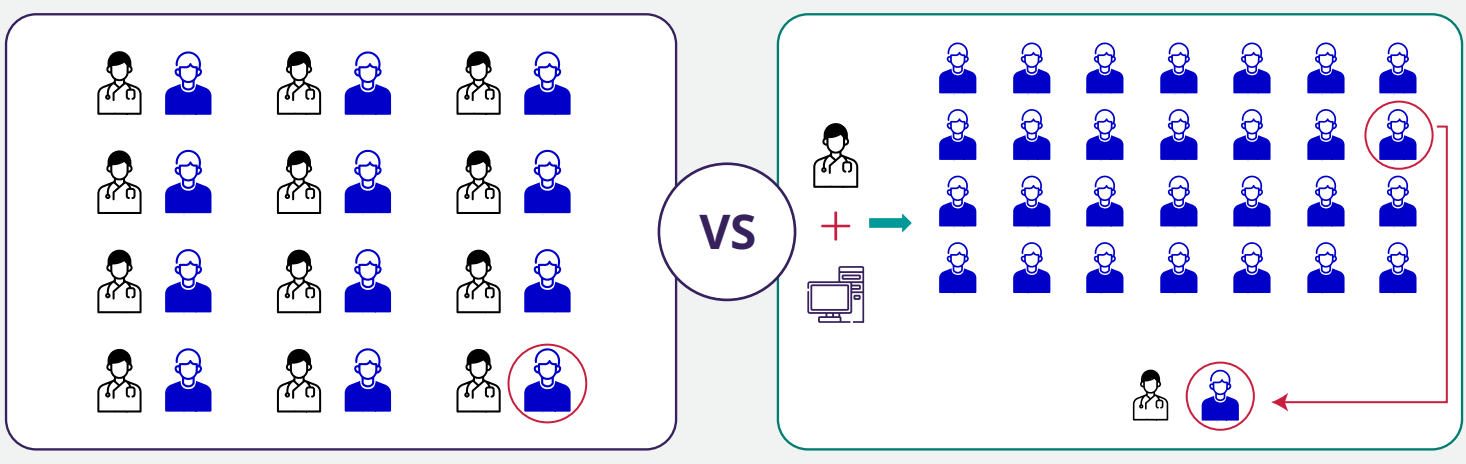


Traditional Care Model

- 1:1 Encounters
- **Inefficient** clinician encounters for **all patients** regardless of need for **intervention**

Population Health Management Care Model

- Electronic dashboard screens and identifies patients in need of intervention
- **Efficient** and **focused** clinician encounters for **specific patient(s)** in need of **intervention**



Differentiating Between Digital Tool Models[25]

Clinical Decision Support (CDS)

- Displays guidance **only at point of care** (entry/signature/etc.)
- Impacts clinical decision making for **single patient**
- **Not responsive** to real-time changes in patient clinical status

Population Health Management Dashboard

- Provides **proactive surveillance** for problems in real time throughout the course of care
- Identifies potential interventions on **multiple patients**
- **Responsive** to real-time changes in patient clinical status

Quality Improvement/ Management Dashboard

- **Retrospectively** evaluates performance
- **Indirectly** impacts clinician decision making and care of future patients
- **Not responsive** to real-time changes in patient clinical status

Population Health-Based Digital Tools May:

- Enable clinicians to efficiently manage patients and coordinate care through seamless integration of clinically relevant information.[17,18,22,23]
- Improve the quality and safety of care by support of actionable interventions.[17-22]
- Support systematic initiatives to anticoagulation management.[17]

What Health Systems Can Do: Anticoagulation Stewardship Core Elements[3]

Because each health system is unique, no single digital tool will apply to all facilities. As such, implementation of elements may need to be customized based on infrastructure and access to resources.

Secure Administrative Leadership Commitment

- **Prioritize** anticoagulation **quality** across the organization.
- Allocate personnel and information technology (IT) resources to implement and sustain technology systems that improve the quality, safety, and efficiency of anticoagulation management.

Establish Professional Accountability and Expertise

- Identify a **champion** to serve as the **leader** who is accountable for implementation oversight of the digital tools and achievement of related goals.
- Identify **one or more clinician(s) with advanced training and expertise** in anticoagulation management and secure informatics support in development, implementation, and evaluation of the digital tools.

Engage Multidisciplinary Support

- Identify **multidisciplinary** representatives to obtain valuable perspectives from **all domains of anticoagulation management** (e.g., surgical and non-surgical clinicians, nursing, pharmacy, information technology, data analytics).
- Establish a mechanism (e.g. standing committee) for multidisciplinary input on the implementation and performance of the digital tools.

Perform Data Collection, Tracking, and Analysis

- Develop and implement processes to collect data and track outcomes to evaluate the **safety, efficacy, and cost-effectiveness** of the digital tools and identify opportunities for improvement.

Implement Systematic Care

- Develop and implement policy addressing key aspects of the digital tools, such as structure and function of the tools, and defining the roles and responsibilities for those using the tools.
- Implement **evidence-based clinical guidelines** to drive interventions (e.g., periprocedural management, automatic dose adjustments based on age, weight, and/or organ function; automatic alerts to identify unnecessary therapeutic duplications or inappropriate prescribing) to drive interventions and **mitigate unintended variation in care.**

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For information on Anticoagulation Stewardship visit https://acforum.org/web/education-stewardship.php
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