**Anticoagulation Management**
Anticoagulation management includes standard safe practices to prevent harm from use of anticoagulants such as warfarin and unfractionated heparin.

### Domain
**Patient Care Processes:**
Clinical processes that ensure delivery of high-quality care to individual patients

### Aims
- **Effective:** An evidence-based practice that produces better outcomes than its alternative
- **Safe:** Delivery of care in a manner that minimizes any risk of harm to a patient

### Process Attributes

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Cost to Implement** | The monetary resources required to implement this process  
**Moderate:** In addition to the improvement effort, relies on additional personnel and/or technology |
| **Time to Implement** | The amount of time, from months to years, it will take on average to establish this process  
1 to 2 years |
| **Difficulty to Implement** | The challenges of implementing this process  
**Moderately Challenging:** Either involves multiple units or disciplines OR requires a substantial shift in culture and/or operations, but not both of these |
| **Level of Evidence** | The degree to which the actions in this process are supported by research and experience; based on the Cochrane scale  
**Strong Evidence:** Level I or Level II — Studies published using randomized trials |
Details

Elements

- Identify patients at risk of experiencing adverse events from anticoagulation medications, even when safe practices are used (e.g., frail elderly, pediatric)

- Use a limited number of protocols for prescribing and administering anticoagulants, as well as for recovering from harm and potential harm

- Ensure proper laboratory monitoring and link prescribing of anticoagulants to lab results

- Consider utilizing unit-based pharmacists to manage anticoagulation therapy or develop a centralized service

- Work with patients and families to ensure they can manage their anticoagulants after discharge, using teach-back and show-back techniques to ensure appropriate literacy levels and understanding

- Establish capacity to follow up testing, including specifying who will be responsible for monitoring

- Embed anticoagulation management into a system of safety for high-hazard medications:

Outcomes

- Harm: Decreased harm to patient (e.g., Harms per 100 patient days, as measured by the IHI Global Trigger Tool)
- Cost of Care: Decreased cost per inpatient case
- Readmissions within 30 Days: Decreased readmissions within 30 days
- Reliability: Increased delivery of evidence-based care 100% of the time

Service Lines and Critical Functions

- Applies in All Patient Settings
- Medication Management
- Nursing

Key Measures

- Adverse drug events (harm) associated with anticoagulant medications per patient days or per doses of high-alert medication

- Percent of patients on anticoagulants with lab values outside of therapeutic windows

- Percent of patients on anticoagulant medications for whom the standardized process was used

Reasons and Implications

Importance for Patients and Families

Anticoagulants (e.g., warfarin and heparin), also known as blood thinners, are powerful medications that save lives and prevent further harm. This group of medications also has the potential to cause serious harm if not taken carefully. Patients and families can play an important role in reducing errors and harm to the patient when they understand what medications the patient is taking and why.
Requirement, Standards, Policies, and Guidelines

- Agency for Healthcare Research and Quality (AHRQ)
- American Society of Health-System Pharmacists (ASHP)
- Centers for Medicare & Medicaid Services (CMS)
- Institute for Safe Medication Practices (ISMP)
- National Priorities Partnership (NPP)
- National Quality Forum (NQF)
  Safe Practice for Better Healthcare—2010 Update
  Safe Practice 18: Pharmacy Leadership Structures and Systems
  Safe Practice 29: Anticoagulation Therapy
- The Joint Commission (TJC)
  Sentinel Event Alert Issue 41: Preventing errors relating to commonly used anticoagulants
- The Joint Commission (TJC)
  National Patient Safety Goal (NPSG): NPSG.03.05.01
- The Leapfrog Group

Financial Implications

- Expense reduction can occur due to a decrease in costs associated with adverse drug events. • Expense increase can occur due to technology and protocol maintenance and/or establishment of a centralized service.

Prerequisites

- Implementation of standard processes (such as risk screening, diagnosis and administration protocols and checklists) and standard concentrations
- Access to experts such as pharmacists or hematologists for difficult cases and questions
Resources

Additional Resources

- **The Joint Commission (TJC)**
  Sentinel Event Alert: Preventing errors relating to commonly used anticoagulants

- **National Initiative for Children’s Healthcare Quality (NICHQ)**
  Pediatric How-to Guide: High-Alert Medications

- **Indiana Patient Safety Center**
  Anticoagulation Toolkit

- **Agency for Healthcare Research and Quality (AHRQ)**

- **Para su salud: Diluyentes de la sangre**
  Patient information on warfarin - in Spanish

- **Fairview Southdale Hospital**
  Guide to Anticoagulation Therapy for Patients Who Take Warfarin

- **Agency for Healthcare Research and Quality (AHRQ)**
  Anticoagulation Resources

- **American Society of Health-System Pharmacists (ASHP)**
  Anticoagulation Resource Center

- **Agency for Healthcare Research and Quality (AHRQ)**
  AHRQ Patient Safety Network - Anticoagulant Resources

- **Institute for Safe Medication Practices (ISMP)**
  High-Alert Medication Feature: Anticoagulant safety takes center stage in 2007

Information Compiled By

IHI