

**HQIC Change Pathway:**

Thromboprophylaxis of Hospitalized Patients

# Why Now?

Anticoagulation medications are high-risk medications due to complex dosing, insufficient monitoring and inconsistent patient compliance [[1]](https://www.jointcommission.org/-/media/tjc/documents/standards/r3-reports/r3_19_anticoagulant_therapy_rev_final1.pdf). Anticoagulation therapy has been identified as a leading cause of harm among hospitalized Medicare beneficiaries [[2]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3224344/). Errors involving anticoagulant prescribing and administration in hospitals occur far too frequently and are considered largely preventable. Anticoagulation management is complicated by patient transitions between care settings [[3]](https://doi.org/10.1093/intqhc/mzy177). During the pandemic, a new challenge has presented itself. Recent research suggests that patients with COVID-19 had a higher incidence of thromboembolic events. Up to 60% of COVID-19 related deaths were associated with thrombotic complications, particularly in patients with a history of cardiovascular disease. COVID-19 has underscored the importance of safe anticoagulant therapy in the hospital setting [[4]](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01291-5/fulltext#seccestitle10).

Anticoagulation medications are high-risk medications due to complex dosing, insufficient monitoring and inconsistent patient compliance [1]. Anticoagulation therapy has been identified as a leading cause of harm among hospitalized Medicare beneficiaries [2]. Errors involving anticoagulant prescribing and administration in hospitals occur far too frequently and are considered largely preventable. Anticoagulation management is complicated by patient transitions between care settings [3]. During the pandemic, a new challenge has presented itself. Recent research suggests that patients with COVID-19 have a higher incidence of thromboembolic events. Up to 60% of COVID-19 related deaths were associated with thrombotic complications, particularly in patients with a history of cardiovascular disease. COVID-19 has underscored the importance of safe anticoagulant therapy in the hospital setting [4].

# Review the Data

# The rate of adverse drug events (ADEs) caused by anticoagulants can be measured in a few ways, including:

# Per 100 admissions – Divide the total number of ADEs by the total number of admissions, then multiply by 100

# Per 100 medication orders – Divide the total number of ADEs by the total number of medication orders, then multiply by 100

# Per 1,000 patient-days – Divide the total number of ADEs by the total number of patient-days, then multiply by 1,000

# Per 1,000 discharges – Divide the total number of ADEs by the total number of discharges, then multiply by 1,000

**Consider Common Barriers**

Review common barriers and brainstorm ways to mitigate challenges to implementation in your organization.

* Lack of effective hospital and patient/family partnering strategies to prevent anticoagulant-related harm and readmissions
* Challenges affecting care coordination and hand-offs to the next level of care
* Difficulty understanding guidelines for anticoagulant therapy for special populations such as those with a BMI >31 and pregnant patients
* Difficulty collecting and utilizing anticoagulant-related data

# Perform a Root Cause Analysis

Fill in the [Five Whys](https://www.telligenqiconnect.com/resource/five-whys-worksheet/) template to identify potential causes for your hospital’s adverse drug events.

Fill in the [PDSA Worksheet](https://quality.allianthealth.org/wp-content/uploads/2021/07/HQIC-Small-Test-of-Change-PDSA-Worksheet_AHSHQIC-TO3H-21-870-11.5.21_508.pdf) to identify your goal and complete the Plan-Do-Study-Act cycle for test of change and improvement.

# Identify Promising Practices

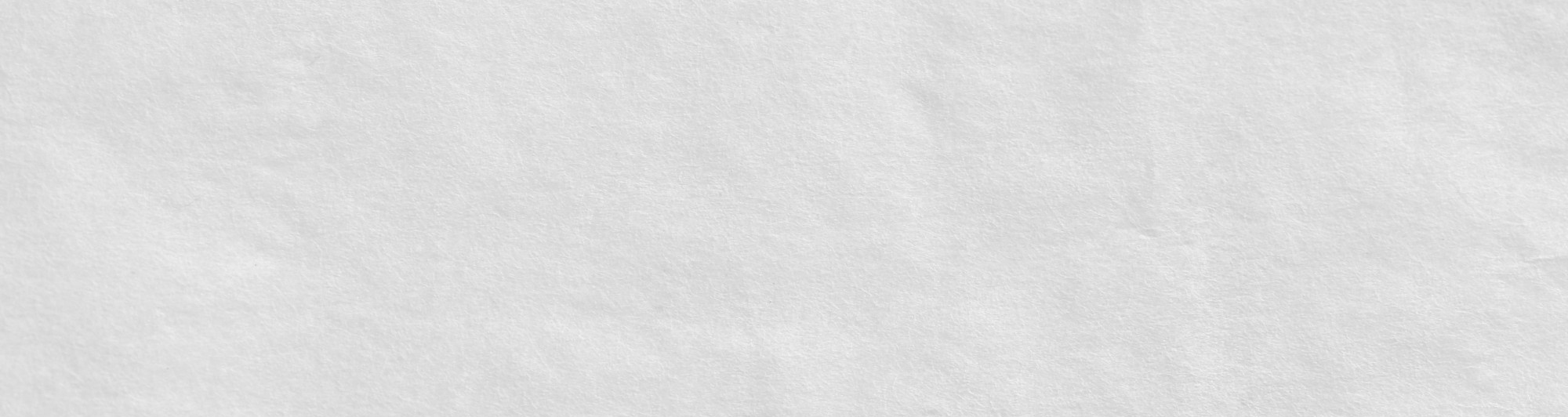
|  |  |  |
| --- | --- | --- |
| **Beginner** | **Intermediate** | **Expert** |
| Complete an [anticoagulation adverse](https://www.mnhospitals.org/Portals/0/Documents/ptsafety/ade/Medication-Safety-Gap-Analysis-Anticoagulation-Agent.pdf) [drug event gap analysis](https://www.mnhospitals.org/Portals/0/Documents/ptsafety/ade/Medication-Safety-Gap-Analysis-Anticoagulation-Agent.pdf) | Establish a [medication reconciliation](https://www.ahrq.gov/patient-safety/resources/match/match3.html) [process](https://www.ahrq.gov/patient-safety/resources/match/match3.html) at admission and discharge | Implement [pharmacist/nurse-](https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/making-healthcare-safer/mhs3/anticoagulants-1.pdf) [managed anticoagulation services](https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/making-healthcare-safer/mhs3/anticoagulants-1.pdf) |
| [Screen for Social Determinants](https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf) [of Health (SDOH)](https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf): Access to  transportation to lab draws; ability to afford medications; readability of  discharge education materials; family  support | Implement core elements of inpatient [Anticoagulation Stewardship](https://acforum.org/web/downloads/ACF%20Anticoagulation%20Stewardship%20Guide.pdf) programs | Implement [perioperative](https://mappp.ipro.org/) [anticoagulant](https://mappp.ipro.org/) management tools |
| Use [structured communication process](https://psmf.org/wp-content/uploads/hand-off-communication.pdf) [(SBAR)](https://psmf.org/wp-content/uploads/hand-off-communication.pdf) (see page 8) for communication to the next provider of care | Implement [Interdisciplinary](https://shmabstracts.org/abstract/the-impact-of-interdisciplinary-anticoagulation-safety-rounds-at-a-large-urban-teaching-hospital/) [Anticoagulation Safety Rounds](https://shmabstracts.org/abstract/the-impact-of-interdisciplinary-anticoagulation-safety-rounds-at-a-large-urban-teaching-hospital/) | Use [clinical decision-support](http://www.anticoagulationtoolkit.org/providers) [tools](http://www.anticoagulationtoolkit.org/providers) specific to anticoagulation management |
| Educate patients and families using the [teach-back method](http://www.teachbacktraining.org/home) | Implement a [COVID-19](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7816593/) [anticoagulation protocol](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7816593/) | Implement [strategies](http://www.ihi.org/resources/Pages/Changes/ReduceAdverseDrugEventsInvolvingAnticoagulants.aspx) to minimize/ prevent adverse drug events involving anticoagulants-use of programmable pumps, alarm device |
| Use the [trigger tool](http://www.ihi.org/resources/Pages/Tools/TriggerToolforMeasuringAdverseDrugEvents.aspx) to measure adverse events | Implement [evidence-based clinical](https://www.bop.gov/resources/pdfs/anticoagulationprotocol2018.pdf) [policies, guidelines and protocols](https://www.bop.gov/resources/pdfs/anticoagulationprotocol2018.pdf) related to anticoagulation | Implement strategies to improve [surveillance of anticoagulant adverse](https://health.gov/sites/default/files/2019-09/ADE-Action-Plan-Anticoagulants.pdf) [drug events](https://health.gov/sites/default/files/2019-09/ADE-Action-Plan-Anticoagulants.pdf) |
| Provide [tools](http://www.anticoagulationtoolkit.org/sites/default/files/toolkit_pdfs/toolkitfull_2.6.pdf) for providers on anticoagulation |
| Provide [patient education tools](http://www.anticoagulationtoolkit.org/patients) |

**Patient and Family Engagement & Health Equity Promising Practices**

* Share patient stories with staff to create awareness and prompt buy-in to implement anticoagulation stewardship
* Provide education to staff on using the [teach-back method](http://www.teachbacktraining.org/home)
* Use a [standardized process](https://qi-library.ipro.org/2021/08/17/blood-thinner-safety-plan/) to assess individual needs in the event of an urgent/emergent incident (e.g., risk for falls)
* Provide [education](https://www.ahrq.gov/sites/default/files/wysiwyg/patients-consumers/diagnosis-treatment/treatments/btpills/btpills.pdf) to patient and families using the teach-back method on [managing anticoagulation medications](http://www.ihi.org/resources/Pages/Changes/EducatePatientstoManageWarfarinTherapyatHome.aspx) after discharge

# Craft Your AIM Statement

Identify your organization’s goals related to adverse drug event prevention. Fill in the blanks with your AIM.



By

, the  **Select** at

will

implement

to improve  **Select**

by

to benefit  **Select**

Example AIM:

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By Month Day, Year, the team at my hospital will implement an anticoagulation protocol for high-risk patients to reduce adverse drug events related to anticoagulants by 5%.

# Next Steps

Not sure how to identify your organization’s root cause? Need help getting started on implementing your selected intervention? Seeking feedback on your AIM statement? Reach out to your HQIC quality improvement partner for assistance.

# References

1. [R3 Report Issue 19: National Patient Safety Goal for Anticoagulant Therapy](https://www.jointcommission.org/standards/r3-report/r3-report-issue-19-national-patient-safety-goal-for-anticoagulant-therapy/)
2. [Anticoagulation-associated adverse drug events. Am J Med.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3224344/)
3. [Anticoagulant medication errors in hospitals and primary care: a cross-sectional study, International Journal for](https://academic.oup.com/intqhc/article/31/5/346/5079234) [Quality in Health Care](https://academic.oup.com/intqhc/article/31/5/346/5079234)
4. [Anticoagulation in COVID-19: reaction to the ACTION trial - The Lancet](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01291-5/fulltext#seccestitle10)

# Resources

* + HQIC ADE Prevention LAN Series: Part-1 - [The Impact of Meaningful Medication Reconciliation on ADEs](https://urldefense.proofpoint.com/v2/url?u=https-3A__us06web.zoom.us_rec_share_hIUAHeFjMZOvVwOt6xRDHq-5FcznshpEKKrrG4bz2ec3WkChWCGTbF6mBuFwDfFIl8.SCEs2VmWOTham8Z7-3FstartTime-3D1642094589000&d=DwMF-g&c=GVdacB6ubqYPDFP-cd_GXA&r=Ir0WMfc4xngXFqYcz15Jm4HojKoHCFDJqe5TqWSMM1U&m=suBn2QIHaVKcM6dGHE4b26jQK2EvPPhSd4mQZ08CPTlbIUbUDdHv-QdCRcURinIW&s=yAZPnSygcE8n4i2B-dqA20-trtT6HQAie_aZ5DKggVc&e) recording and [slides](https://urldefense.proofpoint.com/v2/url?u=https-3A__qioprogram.org_hqic-2Dcommunity-2Dpractice-2Dcall-2Dimpact-2Dmeaningful-2Dmedication-2Dreconciliation-2Dadverse-2Ddrug-2Devents&d=DwMF-g&c=GVdacB6ubqYPDFP-cd_GXA&r=Ir0WMfc4xngXFqYcz15Jm4HojKoHCFDJqe5TqWSMM1U&m=suBn2QIHaVKcM6dGHE4b26jQK2EvPPhSd4mQZ08CPTlbIUbUDdHv-QdCRcURinIW&s=sGSxolUquRk4V9hp4PRTyTfhr4TWty1mlpssCruvskU&e) and [Medication Reconciliation Change Pathway](https://qi.ipro.org/wp-content/uploads/Change-Pathway_Meaningful-Medication-Reconciliation-to-Prevent-Adverse-Drug-Events_508.pdf)
  + [The Joint Commission Anticoagulant Therapy National Patient Safety Goal](https://www.mnhospitals.org/Portals/0/Documents/ptsafety/ade/Medication-Safety-Gap-Analysis-Anticoagulation-Agent.pdf)
  + [Anticoagulation Agent Adverse Drug Event Gap Analysis](https://www.mnhospitals.org/Portals/0/Documents/ptsafety/ade/Medication-Safety-Gap-Analysis-Anticoagulation-Agent.pdf)
  + [CMS-Health-Related Social Needs (HRSN) Screening Tool](https://innovation.cms.gov/files/worksheets/ahcm-screeningtool.pdf)
  + [Patient Safety Movement Foundation-Handoff Communications](https://psmf.org/wp-content/uploads/hand-off-communication.pdf)
  + [Teach Back Training](http://www.teachbacktraining.org/home)
  + [IHI Trigger Tool for Measuring Adverse Drug Events](http://www.ihi.org/resources/Pages/Tools/TriggerToolforMeasuringAdverseDrugEvents.aspx)
  + [Michigan Anticoagulation Quality Improvement Initiative-Provider Toolkit](http://www.anticoagulationtoolkit.org/providers)
  + [Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation](https://www.ahrq.gov/patient-safety/resources/match/match3.html)
  + [Anticoagulation FORUM, Core Elements of Anticoagulation Stewardship Program](https://acforum.org/web/education-stewardship.php)
  + [Develop a Warfarin Dosing Service or Clinic](http://www.ihi.org/resources/Pages/Changes/DevelopaWarfarinDosingServiceorClinic.aspx)
  + [Harm Due to Anticoagulants](https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/making-healthcare-safer/mhs3/anticoagulants-1.pdf)
  + [The Impact of Interdisciplinary Anticoagulation Safety Rounds at a Large Urban Teaching Hospital](https://shmabstracts.org/abstract/the-impact-of-interdisciplinary-anticoagulation-safety-rounds-at-a-large-urban-teaching-hospital/)
  + [Anticoagulation Protocol (guidelines)](https://www.bop.gov/resources/pdfs/anticoagulationprotocol2018.pdf)
  + [Management of Anticoagulation in the Peri-Procedural Period (MAPPP) app](http://mappp.ipro.org/)
  + [National Action Plan for Adverse Drug Event Prevention](https://hqic-library.ipro.org/2021/03/03/national-action-plans/)
  + [Educate Patients to Manage Warfarin Therapy at Home](http://www.ihi.org/resources/Pages/Changes/EducatePatientstoManageWarfarinTherapyatHome.aspx)
  + [AHRQ Patient Education-Blood Thinner Pills: Your Guide to Using Them Safely](https://www.ahrq.gov/sites/default/files/wysiwyg/patients-consumers/diagnosis-treatment/treatments/btpills/btpills.pdf)
  + [Blood Thinner Safety Plan](https://qi-library.ipro.org/2021/08/17/blood-thinner-safety-plan/)
  + [NIH COVID-19 Coagulopathy: Current Knowledge and Guidelines on Anticoagulation](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7816593/)
  + [The HEP-COVID Randomized Clinical Trial](https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2785004)