

Anticoagulation Management & Warfarin Safety: Taking a Systems Approach

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Overview

Prompted by new Joint Commission Standards, we recently evaluated and built additional systems supports for anticoagulation therapy at BWH.

Specific focus on:

- Warfarin
- IV Unfractionated Heparin (IV UFH)
- Low Molecular Molecular Weight Heparin (LMWH)

Briefly review our experience, lessons learned, and future plans

Agenda

1. Approach and Goals for Each Setting
2. New Interventions for Each Setting
3. Successes and Challenges in our Approach
4. Next Steps
5. Questions

Approach and Goals

5 Clinical "Areas" (Each assigned a lead)

Inpatient	Transitions Inpt -> Outpt Outpt-> Inpt	Anticoagulation Management Services (AMS)	Individual Providers	Emergency Department
<ul style="list-style-type: none"> • Standardize warfarin and heparin dosing • Prevent bleeding complications 	<ul style="list-style-type: none"> • Improve information transfer at admission & discharge • Clear ownership of monitoring and dosing post d/c • Improve patient education • Coordinate AMS needs 	<ul style="list-style-type: none"> • Standardize policies and procedures across 4 sites • Uniform patient education across each AMS 	<ul style="list-style-type: none"> • Standardize policies and procedures • Uniform patient education across providers 	<ul style="list-style-type: none"> • Focus on new prescriptions that interact with warfarin • Improve continuity on new starts • Improve patient education

Interventions: Inpatient

Goal	Strategy	Interventions	Hurdles
Standardize warfarin and heparin dosing	Leverage IS	IV UFH Nomogram	<ul style="list-style-type: none"> • Limited data • User friendliness • Accommodating clinical preferences • Correct system recommendations
	Enhance Rx intervention	<ul style="list-style-type: none"> • Require INR Range • Lab requirements • Set starting dose max 	Setting correct triggers
Prevent complications	Leverage IS	<ul style="list-style-type: none"> • Transfusion triggers • Multiple agents triggers 	Setting correct triggers
	Enhance Rx intervention	<ul style="list-style-type: none"> • Epidural catheter • Monitor platelet counts • Monitor Hgb 	Setting correct triggers

Interventions: Transitions

Goal	Strategy	Interventions	Hurdles
Improve information transfer at admission and discharge	Leverage IS	New unique location in EMR for anticoag information	<ul style="list-style-type: none"> • 4 AMSs • Workflow @ discharge
Clear ownership of monitoring and dosing post d/c including coordinating with AMS needs	Transition "coordinator"	"Specialist" for transition issues: Rx, Labs, Handoff, Triage to correct outpatient warfarin manager	<ul style="list-style-type: none"> • Early notification • Integrating into current workflow
Improve patient education	New comprehensive patient material	New system-wide booklet	Determining correct level of content detail

Interventions: Outpatient

Goal	Strategy	Interventions	Hurdles
Standardize outpatient policies and procedures	Provide a uniform set of policies and procedures	<ul style="list-style-type: none"> • Develop warfarin, LMWH guidelines, protocol, policies • Disseminate/Distribute them 	Limited data
Uniform patient education across each AMS and providers	New comprehensive patient material	New system-wide booklet	Determining correct level of content detail

Successful Strategies

- Joint Commission Mandates Can Help
 - IT prioritization
- Build on Identified Clinical Needs
 - Floor education
 - AMS patient triage
 - Nomogram
- Get input from all stakeholders
 - It takes time, plan and allow for it
- Central coordination with local leadership
- Clinical Experts
 - Their engagement is critical

Challenges and Responses

Challenge	Response
Choosing enhancements	<ul style="list-style-type: none">• Don't be afraid to prioritize• Limited data not a block• Have to start somewhere
Covering everything on the educational material + protocols/policies	<ul style="list-style-type: none">• Allow several iterations• Plan on new versions from 6 months to 1 year from release
Measurement (Not many benchmarks)	Pick outcome (time to goal PTT, time in goal INR target range) + process (how many times process completed or backstop triggered)
Limited resources	Focus on identified needs + Joint Commission

Next Steps

- Continue IS enhancements
- Adjust based on our measurement data
- Explore Pharmacy or AMS inpatient dosing on inpatient side
 - Much like the outpatient setting
 - Education vs. Safety
 - Improved continuity

Questions?

Thank you for your time.

Please also feel free to contact:
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