

Oklahoma Society of Health-Systems Pharmacists
National Patient Safety Goal 03.05.01 Anticoagulation Workshop
Small Group Discussion

1. The hospital implements a defined anticoagulation management program to individualize the care provided to each patient receiving anticoagulation therapy

Purple Team

- It appeared that each team member had a defined anticoagulation program in place at their institutions.
- Margaret reported that the main anticoagulation used at Bone and Joint was UFH and LMWH. She circulated a copy of their guideline for initiating warfarin for DVT.
- The Integris SMC reported that they have been fortunate to approve a full-time RPH position to manage this NPS goal. This individual will come on board soon.

Red Team

- Each institution had identified interdisciplinary working groups to tackle the NPSG 3 goal
- Most represented institutions were working with their respective IT departments in order to develop methods by which patients receiving UFH, LMWH and warfarin treatment regimens could be identified
- Most institutions wanted to implement warfarin protocols that included all lab monitoring orders (i.e., PT/INR, CBC) in the same fashion as currently utilized **UFH** protocols and perhaps have this order set as part of an admissions packet
- From a monitoring standpoint, one hospital pharmacy is contemplating a policy for mandatory “current” INR availability prior to profiling a patient’s warfarin order to insure appropriate therapy; another hospital pharmacy plans to utilize “one-time” warfarin orders for their patients on a daily basis to facilitate physician INR review before the patient receives warfarin
- One institution is incorporating a vitamin K usage guideline directly into their warfarin protocol
- Each institution felt confident in their primary use of a LMWH for DVT prophylaxis although may not necessarily be clearly documented as “policy”—perhaps this element could be incorporated into an overall “anticoagulant policy” encompassing both prophylaxis and treatment
- In addition to defining their respective management programs, each institution is struggling somewhat to compose a cohesive policy that traverses other disciplines involved in patient management (i.e., nursing)

2. To reduce compounding and labeling errors, the hospital uses only oral unit dose products, pre-filled syringes, or pre-mixed infusion bags when these products are available. Note: For pediatric patients, pre-loaded syringe products should only be used if specifically designed for children.

Orange Team – report not yet available

Brown Team – report not yet available

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3. The hospital uses approved protocols for the initiation and maintenance of anticoagulation therapy appropriate to the medication used, to the condition being treated, and to the potential for medication interactions.

Blue Team

1. What are organizations currently doing to meet this goal?
 - Most organizations have an Unfractionated Heparin (UFH) protocol for anticoagulation; some continue to update these protocols for weight-based dosing, verifying PTT values.
 - Most organizations have a VTE prophylaxis protocol, but most had not considered a Low Molecular Weight Heparin (LMWH) protocol for anticoagulation/ treatment.
 - All organizations needed the most help with an inpatient warfarin protocol. The idea of warfarin policies seemed more appropriate than a cookie-cutter protocol, like UFH.
 - We learned these goals pertain only to UFH, LMWH, & warfarin; Direct Thrombin Inhibitors & fondaparinux also need protocols, but most will not prioritize same deadlines for these medications.
2. What are the next steps to accomplish?
 - Update UFH protocols.
 - Weight-based dosing*
 - Verify therapeutic PTT values (0.3-0.7 IU/mL anti-Xa activity*)
Platelet monitoring (automatic lab orders) at baseline & every 2-3 days*
(* 2008 ACCP Guidelines for Antithrombotic and Thrombolytic Therapy, 8th ed)
 - Implement VTE prophylaxis protocols.
 - Hospital-wide assessment of VTE risks & contraindications to pharmacologic or mechanical prophylaxis
 - Appropriate regimens for all hospital populations (medical, surgical, etc)
 - Policies regarding dosing in special populations
 - Develop & implement LMWH anticoagulation protocols.
 - Weight-based dosing
 - Policies for anti-Xa monitoring in special populations
 - Develop & implement inpatient warfarin policies.
 - Baseline INR (define baseline as INR draw upon admission)
 - Documented negative pregnancy test in women of child-bearing potential
 - Guidelines for initial dosing (5 mg vs 2.5 mg)
 - Require daily ordering, though this may increase numbers of missed doses & prolong hospitalization
 - INR monitoring (automatic lab orders) daily
 - Warfarin flowsheet for documentation of lab & dose assessment
 - Guidelines for inpatient dosing adjustments
 - Policies for management of supratherapeutic INR & vitamin K administration
 - Develop supporting clinical pharmacy services
 - IT-generated report of critical anticoagulation lab values for review by pharmacist.
 - Require review of INR prior to dispensing warfarin.
3. What resources are needed/ would you like to accomplish this goal?
 - EXAMPLES of protocols!!!
 - Anticoagulant Toolkit looked very helpful: <http://www.purdue.edu/dp/rche/pharmatap/toolkit.pdf>
 - 2008 ACCP Guidelines for Antithrombotic and Thrombolytic Therapy, 8th ed:
http://www.chestjournal.org/content/vol133/6_suppl/
http://www.chestjournal.org/cgi/content/full/133/6_suppl/141S/T4 (UFH protocol)
 - Professional Organizations: www.accp.com & PRN member's list-serv archives, www.ashp.org
 - OSHP Past-President, Susan Fugate, offers protocols used in her Anticoagulation Clinics at INTEGRIS Baptist & Southwest: <http://www.integrish-health.com/integrish/en-us/specialties/a-f/anticoagulation>

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4. What barriers might you encounter to achieving this goal?
 - Administrative approval of protocols
 - Physician support & consistent utilization of protocols
 - Policies to support pharmacist privileging to order necessary INR lab values
 - Enoxaparin may be available as “biosimilar” (not AB-rated) generics soon...how will this impact our practice?
5. What groups should/ are you working with to meet this goal?
 - Physician champion for development, education, and implementation success. Also consult with impacted physicians for early critique in order to build support before formal proposal for approval & implementation.
 - Nursing
 - Laboratory
 - Dietary
 - Education department
 - IT department
6. If resources were not an issue, what would your plan look like?
 - Anticoagulation management services (Dager WE, Gulseth MP. AJHP 2007; 64: 1071-9.)

Gray Team

1. What are you currently doing to meet this goal/objective?
 - Existing heparin protocols currently in place
 - DVT protocol in place for surgery floors
 - Have re-timed warfarin administration times to later in day to have adequate time for lab work to be assessed. (ex-1800 instead of 0900)
 - Formed committees to establish the protocols
2. What are the next steps you plan to accomplish?
 - In process of extending DTV protocol to medicine floors
 - In process of developing guidelines that will stay in chart for physicians to use
 - Developing standardized forms
 - Establishing pharmacy role in ordering baseline INR and other necessary labs
 - Require current INR before warfarin may be administered
 - Have a nursing tool to serve as “reminder” for INR monitoring
3. What resources do you need to accomplish this goal? What resources would you like?
 - Additional pharmacists and funding
4. What barriers might you encounter to achieving this goal?
 - Physicians
 - Lack of education
 - Workload
5. What people/groups/outside organizations are you working with to meet this goal? What groups should you be working with to meet this goal?
 - Multidisciplinary team – physician, nurses, dieticians, laboratory
 - May need to add risk management to team

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4. For patients starting on warfarin, a baseline INR is available, and for all patients receiving warfarin therapy, a current INR is available and is used to monitor and adjust therapy.

Pink Team

- P&T approved policy for pharmacists to be able order lab values (i.e. INR) if new patient comes and no current result is available.
- Warfarin will not be dispensed by pharmacy without a baseline INR result available.
- Add to the MAR a reminder for the nurse to check labs before giving warfarin.
- Implement standing orders for baseline and daily INRs in patients on warfarin. Physician may cancel standing order and write in his/her own frequency of INR monitoring not to exceed 3-7 days.
- Warfarin dosing times between 1200 and 1800 to ensure INR assessed prior to day's warfarin dose being given.
- Most of team's institutions are currently allowing physicians to manage warfarin therapy.

Green Team

- All organizations or institutions have made the pharmacy department responsible to make sure that there is a current INR available.
 - Pharmacy departments can write orders for INR if there is not a current value.
 - Initiation of order sets or protocols to the medical staff.
- Computer software – able to see what patients are on warfarin and if there is an INR value.
 - Pharmacy One Source – Senti 7.
- Administration times at 1600 or 1800 hours to allow for INRs to be drawn before dose is given.
 - Consider stat INR at this time, if one not available.
- Can nursing staff be responsible for INR values after pharmacy hours – in institutions where there is not 24 hour pharmacy coverage?
 - What kind of training for the nursing staff – who is responsible for their training?
 - What holds the nursing staff accountable to complete this task?
 - Pop up box for INR value in bedside scanning.
 - Nurse required putting value in to obtain medication.
- Pharmacist training.
 - Pharmacists are all at different levels of training and they all have a different level of comfort.
- Daily INR value until stable x 3.
 - How often to have INR drawn when patient is stable.
- Does hospital owned skilled nursing units within the hospital have to follow the same rules?

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5. When dietary services are provided by the hospital, the service is notified of all patients receiving warfarin and responds according to its established food/medication interaction program.

Orange Team – report not yet available

Brown Team – report not yet available

6. When heparin is administered IV and continuously, the hospital uses programmable infusion pumps in order to provide consistent and accurate dosing.

Orange Team – report not yet available

Brown Team – report not yet available

7. The hospital has a written policy that addresses and ongoing laboratory tests that are required for UFH and LMWH therapies.

Purple team

- As for the monitoring the laboratory tests for the UFH or the LMWH, the UFH is still ordered per WT based protocol in all of team members' institutions and monitored by PT and PTT. However, none of the above facilities are monitoring for LMWH.
- A lot was discussed for the need to monitor LMWH. The group agreed that it may be a value for obese individuals or those with renal insufficiency.
- One factor different in the group was the access to laboratory results; immediate access vs. calling the floor or the nurse to retrieve the lab values, or going to the floor and looking in the chart.
- The group did not seem to be concerned with regards to the baseline INR ordering.
- Other disciplines required for the program to be successful were discussed; IT dept, a physician champion, nutrition services may all be a value.
- Smaller institution vs. larger institution with an onsite laboratory. Having an automated dispensing system or a computer system linked to the laboratory which would flag critical values.

Red Team

- Heparin protocols that included specific monitoring parameters are currently utilized within each institution
- Protocols surrounding the use of LMWH treatment, not prophylaxis, were in various states of completion and use
- Concern surrounding the need for anti-Xa monitoring for LMWH treatment groups was discussed (i.e., who needs it? how can it be obtained in a timely fashion?)
- There was a recognized need for policy development referencing current UFH protocol use within each institution

If resources weren't an issue, what would your plan look like?

- Would hire pharmacists with primary responsibilities of inpatient anticoagulation

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8. The hospital provides education regarding anticoagulation therapy to prescribers, staff, patients, and families. Note: Patient/family education includes the importance of follow-up monitoring, compliance issues, dietary, restrictions, and potential for ADRs and interactions.

Pink Team

- Patient education
 - Patient education can be provided by case manager, nurse, dietician, or pharmacist. May just provide written education with option to call pharmacist or request pharmacist consult. Would be ideal to have a pharmacist educator position or anticoagulation pharmacist that could fulfill this need.
 - May also consider video education for viewing on patient TVs.
 - May target education sessions in warfarin-naïve patients and simply provide written education for reinforcement in patients on chronic warfarin therapy.
 - Many hospitals have created their own education resource. Hospitals may want to consider their content and printing cost, and may find AHRQ books to be a better solution at \$0.50/book after initial free supply
- Physician education continues to be a challenge to determine most effective means. Possible strategies are one-on-one education, newsletters, fax alerts, and presentation.
- Hospital staff (i.e. nurses) will need education as to the new policies and protocols for anticoagulation and their role in these.

Green Team

- Education of physicians and nurses.
 - Pharmacy department and Quality department working together in medical staff and nursing staff meetings to accomplish this goal.
 - Eliminate loading dose
 - Drug interactions
 - Vit K use
 - Discharge counseling techniques
- Record nursing in-services and place on intranet so that pharmacy does not have to prepare and deliver many in-services.
- Who is responsible for educating patients and family.
 - New start of warfarin.
 - Pharmacy department
 - Previous start of warfarin.
 - Pharmacy, but not reality
 - Next best solutions
 - Dietary
 - Nursing upon discharge
- Pharmacy education.
 - Competency checklist from ASHP book.

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9. The hospital evaluates its anticoagulation safety practices, takes appropriate action to improve its practices, and measures the effectiveness of those actions on a regular basis.

Blue Team

1. What are organizations currently doing to meet this goal?
 - Documentation of pharmacist interventions. Consider generating anticoagulation-specific reports of these interventions already being documented. Terry Crissman (Duncan Hospital) is an OSHP Member who is a valuable contact for this!
 - P & T Committee reports
2. What are the next steps to accomplish?
 - Document pharmacist interventions & clinical activity
 - Define outcomes to assess anticoagulation utilization (patient outcomes; rescue medication utilization; percentages of UFH, LMWH, or warfarin orders not using approved protocols; patients on anticoagulation without required laboratory monitoring; etc)
 - Gather patient outcomes data (recurrence, major bleeding, prolonged hospitalization due to medication ADR, etc)
 - "Dear Doctor" educational letter as reminder of anticoagulation policies
3. What resources are needed/ would you like to accomplish this goal?
 - IT reports of data already collected (critical labs, rescue medications, etc)
 - Reports of medical billing/ coding for patient outcomes data
 - Reports of related CMS Performance Measures (eg SCIP)
4. What barriers might you encounter to achieving this goal?
 - Resources (i.e. time) to document new data
 - Accountability for consistent utilization of protocols
 - Implementation within all populations (ie emergency/ outpatient departments, etc)
5. What groups should/ are you working with to meet this goal?
 - Organization's "anticoagulation management program" (Elements for Performance #1)
 - P & T Committee
 - All hospital departments...physicians, nursing, laboratory, dietary, IT, risk management, medical records
6. If resources were not an issue, what would your plan look like?
 - Anticoagulation management services (Dager WE, Gulseth MP. AJHP 2007; 64: 1071-9.)

Gray Team

1. What are you currently doing to meet this goal/objective?
 - Daily reports of "rescue" meds (such as vitamin K)
 - Daily reports of "high risk" meds (heparin)
 - Critical lab is faxed/called directly to pharmacy (elevated INR)
 - Clinical pharmacist on floors
 - Computer flags for drug-drug interactions
 - Currently have process in place that discrepancies must be resolved at end of nursing shifts.

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2. What are the next steps you plan to accomplish?
 - Review reports and report monthly to committee
 - Review any events and then develop action plan
 - Monitor re-admits for possible adverse events
 - May add feature to computer to have co-signatures for administration of warfarin and INR monitoring
 - Education for pharmacy and nursing departments
 - Chart reviews
 - Follow-up on critical labs to both nursing and physicians

3. What resources do you need to accomplish this goal? What resources would you like?
 - Additional pharmacists and funding

4. What barriers might you encounter to achieving this goal?
 - Lack of coverage
 - Adequate computer program
 - Lag time
 - Physicians
 - Money

5. What people/groups/outside organizations are you working with to meet this goal? What groups should you be working with to meet this goal?
 - Multidisciplinary team – physician, nurses, dieticians, laboratory
 - More physician involvement
 - Need risk management involvement
 - IT involvement is necessary

6. If resources weren't an issue, what would your plan look like?
 - Would hire pharmacists with primary responsibilities of inpatient anticoagulation
 - Share responsibility with nursing

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WORKSHOP PARTICIPANTS

Moderator: Lesley Maloney, OSHP President

GROUP	FACILITATOR	MEMBERS
GREEN	Matthew Bird, Assistant Professor, OU College of Pharmacy and OU Med Center	Zachary Myatt, Clinical Pharmacist, Deaconess Hospital
		Theresa Garner, Director of Pharmacy, Great Plains Regional Med Ctr
		Christopher Martin, Clinical Coordinator, Jane Phillips Medical Center
		LeAnn Graham, Medication Safety Pharmacist, Mercy Health Center
		Neil Barrington, Clinical Coordinator, SW Regional Medical Center
BLUE	Kimi Vesta, Associate Professor, OU College of Pharmacy and OU Med Center	Terry Crissman, Director of Pharmacy, Duncan Reg Hospital
		Lisa Benham, Pharmacist, Integris Bass Baptist – Enid
		Amanda Wright, PharmD, Kindred Hospital
		Barbara Poe, Lead Pharmacist, Moore Medical Center
		Zayne Walters, Student, OU College of Pharmacy
		Marsha Sauer, Director of Pharmacy, Weatherford Reg Hospital
		Generosa Jones, Choctaw Nation Anticoag Clinic
BROWN	Darin Smith, Director of Pharmacy Services & Performance Improvement, Norman Regional	Sherri Bradford, Staff Pharmacist, Edmond Medical Center
		Gina Melson, Lakeside Women’s Hospital
		Shelly Wallace, Mercy Memorial Health Center
		Linda Bull, Director of Pharmacy, OK Surgical Hospital
GRAY	Chelsea Church, Associate Professor of Pharmacy Practice, St. Anthony/SWOSU	Robin Thomas, Clinical Pharmacist, Deaconess Hospital
		Charles Raff, Pharmacy Director, Integris Baptist Reg Health Center
		Tami Spears, Pharmacy Director, Kindred Hospital
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		Vanessa Hill, Staff Pharmacist, Integris Canadian Valley
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		Burl Beasley, Pharmacist, Mercy Health Center
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