ANTICOAGULATION MANAGEMENT

Purpose:
To offer a multidisciplinary anticoagulation management program that provides individualized patient care throughout the continuum of care. This program and protocols are developed according to evidence-based medicine including processes for selection, prescribing, ordering, preparation, dispensing, monitoring, education and evaluation based on the established Joint Commission guidelines.

Special Considerations/Safety:
Anticoagulation is a treatment that requires careful dosing due to the complexity of these medications, monitoring their effects, and patient compliance with outpatient therapy. The use of standardized protocols for these high risk medications (unfractionated heparin, low molecular weight heparin, warfarin, thrombolytics, and other anticoagulants), along with patient, family and staff education can help reduce the risk of adverse drug events.

Who Can Perform: Patient caregivers (Physicians, Nurses, Pharmacists, Dieticians, laboratory technicians, Therapists) who care for patients using anticoagulation therapy throughout the continuum of care.

Equipment:
Disease state and anticoagulation protocols
Bleeding/Anticoagulant precautions sign
Medications included: Heparin, LMWH (enoxaparin, dalteparin, fragmin), warfarin, GIIbIIIa Inhibitors (Integrelin, Reopro), Thrombolytics (TPA, Streptokinase, Reteplase), Factor Xa Inhibitors (Rivaroxaban, dabigatran, apixaban)

Medication Selection & Procurement (A2)
The Pharmacy Department will provide oral unit-dose products, prefilled syringes, and pre-mixed infusion bags when these products are available to reduce compounding and labeling errors. Only prefilled products specifically designed for pediatrics will be used in that patient population. Pharmacy will:
1. Limit the number of heparin and warfarin strengths and periodically review
2. Dispensed warfarin in unit dose packaging
3. Implement look-alike and sound-alike safety measures
4. IV Heparin bags separated on shelf
5. Like products will be placed in cubie stations or in separate drawers when possible. If space is limited, similar strengths will be allowed in the same drawer to minimize the potential harm.
6. Use products with acceptable unit dose bar-code identification
Patient Anticoagulant Management Program
The Health System has a defined anticoagulant management program that individualizes care provided to all patients on anticoagulant therapy. This is accomplished through the use of approved protocols to initiate and maintain anticoagulation therapy appropriate to the medication used, the patient’s condition, and the potential for drug interactions, and adverse reactions. This program includes:
1. Established programs / protocols include, but not limited to, Heparin, LMWH, warfarin, thrombolytics, and GIIIB/IIIA Inhibitors
2. Protocols containing formulary approved drugs.
3. Ensure appropriateness of indication, dosage, and patient’s condition.
4. Availability of no more than two Weight-based heparin protocols.
5. Heparin CANNOT be administered within at least 6-12 hours after a LMWH dose.
6. Health system monitoring procedures for baseline and ongoing laboratory tests
7. Use of programmable pumps
8. Pharmacy monitoring services available
9. Guidelines for reversal therapy for over-anticoagulation

Preparation, Storage, and Dispensing
The following measures are taken to ensure the safe preparation, dispensing and storage for all anticoagulant medications throughout the organization:
1. Assess appropriateness to be stored in Automated Dispensing Machines (ADM) via periodic usage review
2. Limit number of concentrations and dosage strengths stored in ADMs
3. Separate like products in central storage and in ADM
4. Pharmacy conducts double checks when dispensing from the pharmacy or when adding to ADM with Bar Code Technology.

Minimizing Administration Risk
To ensure the safe use of anticoagulation therapy:
1. Use programmable infusion pumps to administer IV heparin
   Conduct double checks prior to administration.

Minimizing Monitoring Risk
To ensure the safe use of anticoagulation therapy:
1. Anticoagulants are incorporate into approved high alert policy and protocols.
2. Critical Lab values reported according to policy.
3. Pharmacy services dispense warfarin for each patient in accordance with established monitoring procedures (See Pharm 127)
4. A baseline International Normalized Ratio (INR) is available, prior to administration for all patients starting on warfarin and for all patients on warfarin therapy, a current INR is available and used to monitor and adjust therapy. Dialysis patients newly ordered may defer until next day.
5. The organization policies address baseline and ongoing lab tests that are required for heparin and LMWH therapies. (See Heparin and LMWH protocols)
6. Authoritative resources are used to manage potential food and drug interactions for patients receiving warfarin.
7. Precautions to prevent falls, bleeding, and infection are implemented with reportable conditions identified. (see Bleeding/Anticoagulant Precaution policy PFK231)

**Physician, Staff, Patient and Caregiver Education**

The organization provides education regarding anticoagulation therapy to physicians, staff, patients and families/caregivers.

A. **Patient/Caregiver Education to include:**
   1. Importance of follow-up monitoring
   2. Compliance issues
   3. Drug Food Interactions
   4. Potential for adverse drug reactions and interactions
   5. Signs & symptoms of bleeding
   6. Drug interactions & duplication,
   7. Documented to understanding
   8. Purpose/Use
   9. Safety awareness (med alert bracelet, inform dentist/other providers)

B. **Physician and Staff Education**

Develop and implement staff education in each discipline area based on the established protocols including education of brand and generic names and medication mechanisms and dosing.

**On Going Evaluation of Safety Practices**

Evaluation of anticoagulation safety practices include but are not limited to the following: (A11)

1. Periodic audit of practices as outlined in policy and protocols
2. Formulary Class review
3. Medication Use Evaluations (MUEs)
4. Adverse Drug Reactions (ADRs)
5. Anticoagulant medication errors are reviewed on an ongoing basis. Improvement strategies are identified and implemented Medication and clinical safety alerts identified from outside agencies (ISMP, JCAHO, manufacturer, etc) are reviewed and implemented
6. Policies and procedures are reviewed and updated to minimize the likelihood of adverse events.
7. Anticoagulation safety practices evaluated, issues and trends identified, with improvement strategies implemented and effectiveness of those actions reported to the Patient Safety Committee quarterly.
8. The anticoagulant Management program will be overseen by the Director of Pharmacy and Chief Nursing Officer and reported to the Patient Safety Committee at least quarterly.

**HOME CARE**

**Identification or patients**

On admission to the service, staff will identify those patients that are currently on warfarin, unfractionated heparin, or LMWH. This information will be documented for ongoing identification for all care providers.
A. Prior Lab draw information is documented for baseline therapy. Physician communication is sent for those needed required baseline levels.
B. Medication review for interacting and duplicate therapy is performed upon referral and with medication changes. Communication to the physician is sent for duplicate therapy and potential drug interactions.
C. Dietary referrals
D. Patient Education
E. Staff Education – Refer to hospital policy

OUTPATIENT PHARMACY
A. The outpatient Pharmacy will screen for duplicate therapy and potential drug interactions. Communication to the physician is sent for duplicate therapy and potential drug interactions.
B. Staff Education – Refer to hospital policy

REFERENCES:
Joint Commission Patient Safety Goals NPSG.03.05.01
HeparinNomogram Policy PFK-022
High Risk Medication Policy PFK 226
Coumadin Assisted Dosing Policy/Protocol and Management of Excessive Anticoagulation Policy/Protocol Pharm 127
Standing Orders for Reaprox/Integrinil
Low Molecular Weight guidelines
Bleeding/Anticoagulant Precautions PFK 231
Reducing Risk of Fall – PFG 4437
Critical Lab Policy – PFG 416
Med Administration PFK 014

DATE OF ORIGIN: 6-2008
COMBINATION DATE: REVIEWED: 10/11,
REVISED: 4/09, 11/12, 2/13
ATTACHMENT:

OTHER COMMITTEE REVIEW/APPROVALS:

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<th>Pharmacy &amp; Therapeutics Committee</th>
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