Delegation Protocol Number: 12

Delegation Protocol Title:
Pharmacist Management of Warfarin - Adult - Inpatient

Delegation Protocol Applies To:
All University Hospital (including The American Center and Rehab hospitals) adult inpatients

Target Patient Population:
Adult inpatients initiated or managed on warfarin

Delegation Protocol Champion:
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Delegation Protocol Reviewers:
Anne Rose, Pharm D – UWHC Pharmacy, Inpatient Services

Responsible Department:
Department of Pharmacy

Purpose Statement:
This protocol delegates authority from the patient's ordering provider to the pharmacist to assess, dose adjust, and monitor warfarin therapy by placing the order "Note: Warfarin Dosing by Pharmacy per Protocol."

Who May Carry Out This Delegation Protocol:
Inpatient clinical pharmacists licensed in the state of Wisconsin who care for adult patient with documented completion of warfarin training, a passing score on the warfarin competency, and whom are trained in the use of this delegation protocol.

Guidelines for Implementation:
1. Provider Evaluation
   1.1. A provider initiates the authority to the pharmacist to dose warfarin via the order "Note: Warfarin Dosing by Pharmacy".
      - Within the consult order the indication and target INR range must be provided.
   1.2. If the patient requires another form of anticoagulation such as unfractionated heparin or low molecular weight heparin the provider is responsible for ordering.
2. Consulting Pharmacist
   2.1. The pharmacist is consulted to follow a patient's warfarin when the order "Note: Warfarin Dosing by Pharmacy" is received.
   2.2. If the order is received after 20:00 the patient may be assessed by the pharmacist the following day and the provider will be responsible for that evening's warfarin dose.
      2.2.1. The pharmacist will contact the ordering provider for the warfarin order if not provided.
   2.3. A PT/INR, CBC, and PLT count should be resulted prior to the initiation of anticoagulation.
      - If above baseline labs are not available, the pharmacist may enter these laboratory orders using the order mode: Cosign Required, Protocol/Policy.
3. Daily Warfarin Management
   3.1. The pharmacist will conduct a daily assessment and dose warfarin as directed by the UW Health Warfarin Management – Adult – Inpatient Clinical Practice Guideline.

3.2. A consult note and warfarin order will be placed - once the patient has been completely assessed for initiation or continuation of warfarin therapy. Additional notes and orders will be completed when needed to communicate changes in dosing strategies.
    - Any time a warfarin dose is ordered, a corresponding progress note will be entered.

4. Laboratory Monitoring
    4.1. A baseline INR must be resulted prior to the verification of the first dose of warfarin.
        4.1.1. A baseline INR for pre-operative patients must be within the past 30 days.
        4.1.2. A baseline INR for non-surgical patients must be within 72 hours of warfarin initiation.
    4.2. Any time a warfarin dose is entered a current INR must be resulted prior to warfarin order verification.
    4.3. A current INR is reported on the same calendar day as the scheduled warfarin dose.
    4.4. For patients who are maintained on a weekly warfarin dose, the INR should be checked weekly at a minimum.
    4.5. If the INR order has not been entered, the pharmacist may order the INR with an order mode of Cosign Required, Protocol/Policy.
    4.6. If an INR > 5, the primary provider or team must be notified per UW Health Policy 8.07 Critical Results and Clinical Tests.
5. Discontinuing this Delegation Protocol
    5.1. To discontinue pharmacist dosing the order "Note: Warfarin Dosing by Pharmacy" must be discontinued along with the warfarin order, if it had been placed.
6. Transition to Outpatient Management
    6.1. The primary team is responsible for
        6.1.1. Making arrangements for warfarin dosing and INR management before hospital discharge.
        6.1.2. Ordering another form of anticoagulation, if needed, until the patient is therapeutic on warfarin.
    6.2. The pharmacist is responsible for
        6.2.1. Providing recommendation for warfarin dosing and prescription if needed at discharge.
            - Prescription instructions should read: "Take as directed based on INR". In the Comments section it should read: A quantity of *** tablets is equal to a *** days supply" for ambulatory billing purposes.
            - The patient will be provided with written warfarin dose instructions on printed discharge education materials.
        6.2.2. Providing recommendations for low overlap therapy with a molecular weight heparin if the patient has not been on warfarin for more than 5 days and the INR is not therapeutic for appropriate indications.
        6.2.3. Ensuring insurance coverage for low molecular weight heparin, if ordered.
            - May therapeutically interchange to a low molecular weight heparin of equivalent dosing per patient's insurance coverage at discharge.
        6.2.4. Provide and document education to patients and/or patient's caregiver if warranted by the time of hospital discharge.
            - Utilize Health Facts For You #6900: Warfarin Education Booklet
            - Utilize Warfarin Education Video
            - Utilize Health Facts For You #6915: UFH/LMWH Education
            - Utilize Health Facts For You #322: How diet affects warfarin
        6.2.5. Complete education by the time of discharge and document completion in the medical record.
        6.2.6. Initiating the medication management discharge orders for warfarin which includes the following information:
            - Reason for anticoagulation
            - Target INR range
            - Length of therapy

- Date for next INR check
- Name of clinic/provider who will manage outpatient warfarin
- Educational materials provided to the patient
- Bridging therapy needed until target INR is reached
- Longitudinal record of INR values and warfarin doses
- Written warfarin dose

6.2.7. Communication can be completed electronically through the use of 'in basket' messaging for patients managed in the UW Health system or via fax or verbal communication for patients managed outside of the UW Health system.

Order Mode: Protocol/Policy, Without Cosign

References:

1. Mamdani M, Racine E, McCreadie S, Zimmerman C, O'Sullivan T, Jensen G, et al. Clinical and economic effectiveness of an inpatient anticoagulation service. *Pharmacotherapy.* 1999; 19(9):1064-1074
2. Dager WE. Improving anticoagulation management in patients with atrial fibrillation. *Am J Health-Syst Pharm*. 2007; 64:2279-80
3. Bond CA, Raehl CL. Pharmacist-provided anticoagulation management in United States hospitals: death rates, length of stay, Medicare charges, bleeding complications, and transfusions. *Pharmacotherapy*. 2004; 24(8):953-963.
4. Dager WE, Branch JM, King JH, White RH, Quan RS, Musallam NA, et al. Optimization of inpatient warfarin therapy: impact of daily consultation by a pharmacist-managed anticoagulation service. *Ann Pharmacother* 2000; 34:567-572
5. Ageno W, Gallus A, Wittkowsky A, et al. American College of Chest Physicians. Oral anticoagulation therapy. American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (9th Edition). *Chest*. 2012; 141 (44S-88S.
6. Fowlers S, Gulseth M, Renier C. et al. Inpatient warfarin: experience with a pharmacist-led anticoagulation management service in a tertiary care medical center. *AM J Health-Syst Pham.* 2012; 69:44-48.
7. UW Health Inpatient Warfarin Management – Clinical Practice Guideline

Collateral Documents/Tools:

UW Health Guidelines for Inpatient Warfarin Management in Adults
Health Facts For You # 6900: Warfarin Education Booklet
Health Facts for You #6915: UFH/LMWH Education
Health Facts For You #322: How Diet Affects Warfarin

Approved By:

UWHC Anticoagulation Subcommittee: January 2009; November 2010; *January 2014; *May 2016
UWHC Pharmacy and Therapeutics Committee: January 2009; November 2010; *March 2014; *May 2016
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