Delegation Protocol Number: 12

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

Delegation Protocol Applies To:
All adult inpatients

Target Patient Population:
Adult inpatients initiated or managed on warfarin

Delegation Protocol Champion:
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Responsible Department:
Department of Pharmacy

Purpose Statement:
This protocol delegates authority from the patient's ordering provider to the pharmacist to assess, order, and monitor warfarin therapy to reduce unnecessary variation and to increase provider efficiency.

Who May Carry Out This Delegation Protocol:
Pharmacists

Guidelines for Implementation:
1. This protocol is initiated a provider places the order "Note: Warfarin Dosing by Pharmacy" and includes the indication for warfarin and target INR range.
2. The provider is responsible for ordering any additional anticoagulation (e.g., heparin, low molecular weight heparin).
3. If the "Note: Warfarin Dosing by Pharmacy" order is placed after 20:00, and the pharmacist is unable to complete the review, the pharmacist will notify the provider they are responsible for that evening's dose and that a pharmacist will assume responsibility the following day.
4. Daily responsibilities
    4.1. The pharmacist will review subjective and objective data to develop a daily assessment and plan for warfarin dosing and laboratory monitoring using the UW Health Warfarin Management - Adult - Inpatient Guideline**.**
    4.2. Documentation through a progress note in the medical record must be completed using the note template ".rxrpkwarfarin" each day a Prothrombin Time/INR is resulted or an order for warfarin has been placed.
    4.3. Ensure necessary warfarin orders and labs (i.e., Prothrombin Time/INR and/or CBC without Differential) have been placed.
        4.3.1. Standard dosing times for warfarin will be utilized (e.g. 2100) unless otherwise specified for patient preference or to account for drug specific interactions (e.g. tube feeds).
    4.4. For a Prothrombin Time/INR greater than 5, the pharmacist will contact the primary provider or team for a warfarin dosing plan.
5. Timing of Labs
    5.1. New warfarin starts (not on warfarin prior to admission) must have a Prothrombin Time/INR and CBC without Differential resulted in the past 72 hours, or for post-operative patients within the last 30 days.

5.2. Pregnancy test at baseline for female patients with childbearing potential between the ages of 11 and 55 years. Patients are considered to be excluded if they:
  5.2.1. Are postmenopausal (12 months of amenorrhea in a women over age 45 years old in the absence of other biological or physiological causes)
  5.2.2. Had a hysterectomy or bilateral salpingo-oophorectomy
  5.2.3. Have ovarian failure
  5.2.4. Had a bilateral tubal ligation or another surgical sterilization procedure
  5.2.5. Are known to be pregnant
  5.2.6. Have had a miscarriage or abortion within the last 7 days
  5.2.7. Have given birth within the past 4 weeks
5.3. Patients that may have an unstable warfarin response (e.g., dose titration, drug-interactions, dietary changes, etc.) must have a Prothrombin Time/INR and CBC without Differential upon admission, Prothrombin Time/INR daily, and a CBC without Differential at least weekly.
5.4. Patients on a maintenance dosing regimen should have Prothrombin Time/INR and CBC without Differential upon admission and at least weekly.

6. Discontinuing the Delegation
6.1. The delegation protocol ends upon provider discontinuation of the "Note: Warfarin Dosing by Pharmacy" order.
  6.1.1. If clarification is needed on the intent of order discontinuation, the pharmacist will contact the ordering provider.
  6.1.2. If warfarin is still active on the patient's medication administration record, the pharmacist will clarify if the warfarin dose should be discontinued or continued.

7. Transition to Outpatient Management
7.1. The primary team is responsible for:
  7.1.1. Making arrangements for outpatient warfarin management before hospital discharge.
  7.1.2. Ordering any needed bridging anticoagulation until the patient is therapeutic on warfarin.
7.2. The pharmacist is responsible for:
  7.2.1. Confirming warfarin dosing and providing a prescription if needed at discharge.
  7.2.2. 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.
  7.2.3. Providing the patient/caregiver or receiving facility or referring provider written warfarin dose instructions as part of the after hospital care plan.
  7.2.4. Providing recommendations for overlap therapy with a low 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.
  7.2.5. Evaluating insurance coverage for low molecular weight heparin, if ordered, and may therapeutically interchange to a low molecular weight heparin of equivalent dosing per patient's insurance coverage .
  7.2.6. Provide and document education to patients and/or patient's caregiver if warranted by the time of hospital discharge.
    7.2.6.1. Health Facts For You #6900: Warfarin
    7.2.6.2. Warfarin Education Video: Warfarin (Coumadin) and You
    7.2.6.3. Health Facts For You #6915: Heparin UFH/LMWH)
    7.2.6.4. Health Facts For You #322: Coumadin and Warfarin Diet Interactions
7.3. For all patients started on warfarin, patient education that highlights the importance of the following should be completed:
  7.3.1. Follow-up
  7.3.2. Monitoring
  7.3.3. Compliance
  7.3.4. Dietary restrictions
  7.3.5. Potential for drug interactions
  7.3.6. Potential adverse reactions

7.3.7. Pregnancy: contact provider immediately if patient becomes pregnant or suspects pregnancy; educate patient to utilize contraception to prevent pregnancy while using warfarin (unless patient is postmenopausal [12 months of amenorrhea in a women over age 45 years old in the absence of other biological or physiological causes]; has had a hysterectomy or bilateral salpingo-oophorectomy; has ovarian failure; has had a bilateral tubal ligation or another surgical sterilization procedure).

7.4. Document and communicate the warfarin discharge plan in the after hospital care plan to the provider/clinic identified for outpatient management by utilizing the smart phrase ".warfarindischargeinstructions" which includes the following information:

7.4.1.1. Reason for anticoagulation
7.4.1.2. Target Prothrombin Time/INR range
7.4.1.3. Potential drug, herbal, or dietary supplement interactions
7.4.1.4. Length of therapy
7.4.1.5. Date for next Prothrombin Time/INR check
7.4.1.6. Name of clinic/provider who will manage outpatient warfarin
7.4.1.7. Educational materials provided to the patient
7.4.1.8. Bridging therapy needed until target Prothrombin Time/INR is reached
7.4.1.9. Longitudinal record of INR values and warfarin doses
7.4.1.10. Recommended warfarin dose to initiate at discharge

7.4.2. 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:
For warfarin orders: Protocol/Policy, Without Cosign
For laboratory orders: Cosign Required, Protocol/Policy

References:

1. Mamdani M, Racine E, McCreadie S, 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(21):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, et al. Optimization of inpatient warfarin therapy: impact of daily consultation by a pharmacist-managed anticoagulation service. *Ann Pharmacother.* 2000;34(5):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, Tomsche J. Inpatient warfarin: experience with a pharmacist-led anticoagulation management service in a tertiary care medical center. *AM J Health-Syst Pharm.* 2012;69(1):44-48.

Collateral Documents/Tools:
1. UW Health Warfarin - Adult - Inpatient Clinical Practice Guideline
2. Health Facts For You #6900: Warfarin
3. Warfarin Education Video: Warfarin (Coumadin) and You
4. Health Facts For You #6915: Heparin UFH/LMWH)
5. Health Facts For You #322: Coumadin and Warfarin Diet Interactions

Approved By:
UW Health Anticoagulation Subcommittee: December 2019
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