



Improving DVT Prophylaxis Through Use of a Standardized Admission Orders Template



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Project Aim Statement:

Increase the percentage of newly admitted general medicine patients receiving appropriate DVT prophylaxis to 90% by March 2008 by implementing a standardized admission order set.

DVT Prophylaxis: Why We Care:

- High Prevalence of DVT**
 - 0.1% incidence; affects 30 million Americans each year
 - 10% of hospital deaths due to pulmonary embolism
- Adverse Consequences of DVT**
 - Patient Outcomes: DVT, PE, post-thrombotic syndrome
 - Economic burden: \$1.5 billion per year (excluding physician costs)
- Effective Prophylaxis**
 - Highly effective in preventing DVT and VTE
 - Low incidence of side effects
 - Repeatedly demonstrated to be cost-effective

Pre-Intervention Data:

Patient sampling: 65 general IM patients admitted between Nov-Dec 2007 for longer than 24 hours. 42 patients (64%) met criteria for DVT prophylaxis based on risk stratification of a score of >1. Of the 65 total patients screened, 49 (76%) received appropriate DVT prophylaxis based on risk score. Out of the 65 patients, VTE order forms were put in 41 charts, but only 2 forms were completed.

Interventions Considered:

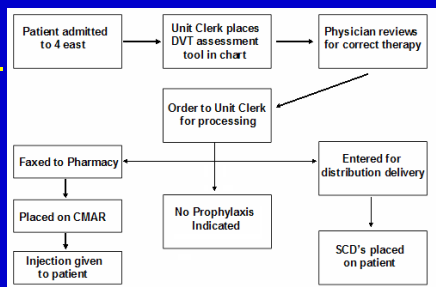
- Nurse driven risk stratification and prophylaxis
- Create poster reminders to do DVT risk assessment
- Put DVT prophylaxis orders on physician admission order form
- Force function for DVT score and orders in EMR

Yield	Effort	
	Low	High
Low	2	1
High	3	4

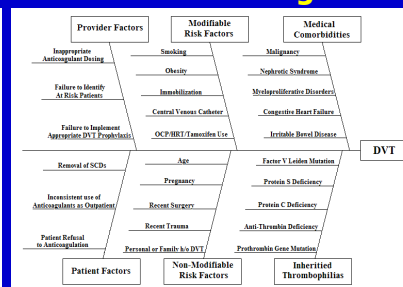
Our Intervention:

General Medicine Admit Order Template with DVT prophylaxis orders. Order templates were available in the ER, nursing station, medicine swamps, and online. Unit clerks were instructed to contact ordering physician if orders were incomplete. Order templates were introduced the first weekend of February; data collection began Monday Feb 4, 2008.

Process Flow Chart



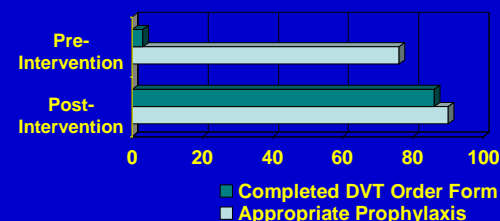
Fishbone Diagram



Post-Intervention Data:

Patient sampling: 72 GIM patients admitted to general medicine service from 2/4/08 to 2/22/08. The order template was completed in 86% of cases. Out of the 72 patients, 65 (90%) received appropriate DVT prophylaxis based on risk scoring.

Intervention Impact on Appropriate DVT Prophylaxis



Admission Orders Template

University of Missouri HEALTH CARE
One Hospital Drive, Columbia, MO 65203
737-962-4141

Physicians Orders
General Medicine Service Admission Orders
Page 1 of 2, version February 4, 2008

Please check box () or fill in blank to activate that order:
Level of Care: Inpatient 23-hour observation short stay (planned outpatient visit < 6 hours)

Admit to General Medicine Service Team: _____ Team Pager: _____
Attending MD: _____ Pager Number: _____
Senior Resident: _____ Pager Number: _____
Intern: _____ Pager Number: _____
Medicine On-Call Pager: _____ Pager Number: _____

Diagnoses: _____

Condition: Good Fair Stable Serious Guarded
Code Status: Full DNR Limitations (SEE SEPARATE SHEET) other: _____

Diet:
 NPO low ADA _____ KCAL _____ low sodium low cholesterol regular other diet: _____

Nursing:
Vital Signs: every 4 hours every 8 hours Orthostatics
Notify MD if: T > 38.5 or O2 sat < 88% or BP < 90/60 or > 180/100
Activities: as tolerated ambulate TID out of bed to chair bedrest bedrest with BRP
 other activity level: _____

IBO: _____
 fall precautions aspiration precautions
 Foley Catheter: no yes: indication: _____
Other Nursing Orders: _____

Lab:
 HPO PT/INR UA Ca serum phos
 BMP PTT urine CAS Mg ACO
 CMP blood culture x 2 CRMB/Troponin q 6 hrs x 3
 Platelets 72 hours after starting Heparin or Enoxaparin (order if Heparin or Enoxaparin is ordered on Page 2).
Other Labs: _____

Radiology: CXR PA/lateral CXR portable KUB other: _____

Consults:
 PT/OT nutrition wound care social service
 other consult(s): _____

IV Fluids: _____ at _____ mL/hour x _____ liters fluid restriction: _____ liters/day
 _____ No Known Drug Allergies

Alerts: Nurse to update/Verify Allergy Profile in PowerChart to include: _____
 No Known Drug Allergies

Medications:
 per Admission Home Medication Reconciliation and Orders sheet.
 Adult Bronchodilator Protocol per Respiratory Care Therapist.
Other Medications: _____

Physician/Provider signature: _____ pager: _____ date: _____ time: _____
MR 310-1-08

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Physicians Orders
General Medicine Service Admission Orders
Page 2 of 2, version February 4, 2008

Factor Scores to determine VTE Risk Factor Score (Use for reference to order DVT prophylaxis)

Low risk: Score of 1 or less (Risk profile DVT 0.4%)
Moderate risk: Score of 2 or 3 (Risk profile DVT 2.4%)
High risk: Score of 4 or 5 (Risk profile DVT 4.4%)
Very High risk: Score of 6 or 7 (Risk profile DVT 10-20%)

Relative contraindications to anticoagulation:
Prior history of cerebral, GI, or GU hemorrhage
Thrombocytopenia
Intracranial neoplasms
Active hemorrhage
Major solid organ injury
Intracranial hemorrhage

Contraindications to anticoagulation:
Active hemorrhage
Major solid organ injury
Intracranial hemorrhage

Contraindications to antiplatelet:
Active hemorrhage
Major solid organ injury
Intracranial hemorrhage

Contraindications to antiplatelet:
Active hemorrhage
Major solid organ injury
Intracranial hemorrhage

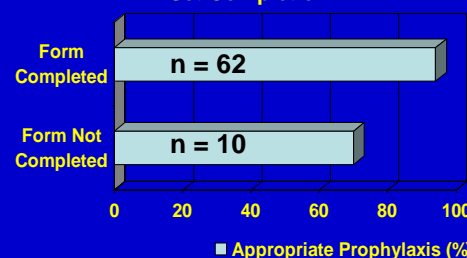
VTE Prophylaxis orders:
 Contraindication to Heparin/Enoxaparin.
 0-1 Low Risk: No prophylaxis other than early ambulation.
 2-3 Moderate-Very High Risk:
 Heparin 5,000 units SubQ every 8 hours.
 Enoxaparin (Lovenox): 40 mg (CIC > 30 mL/min) SubQ once daily.
 30 mg (CIC < 30 mL/min) SubQ once daily.
 Pneumatic Compression Device: calf foot.

Physician: If patient is Very High Risk consider adding Pneumatic Compression Device to either Heparin or Enoxaparin. Contraindication for Heparin/Lovenox must be documented if only Pneumatic Compression Device is ordered.

Other Orders: _____

Physician/Provider signature: _____ pager: _____ date: _____ time: _____
MR 310-1-08

Appropriate Prophylaxis and Order Set Completion



Summary/Conclusions:

Introducing a standardized general medicine order template with DVT prophylaxis orders increased the percentage of patients receiving appropriate prophylaxis from 76% to 90%. When admission order template was completed, appropriate DVT prophylaxis was achieved in 94% of cases. In cases where the admission order template was not completed, appropriate prophylaxis based on risk stratification was 70%.