

Evaluation of the Appropriateness of Venous Thromboembolism Prophylaxis in Hospitalized Oncology Patients after the Implementation of a Standardized Order Set

Ha Trinh, B.S., Pharm.D.
PGY1 Pharmacy Resident

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Objectives

- At the conclusion of the presentation participants should be able to:
 - Recite current national recommendations on venous thromboembolism (VTE) risk assessment and prophylaxis
 - Describe the prevalence of VTE for patients with cancer
 - Discuss the current study

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Epidemiology¹

- VTE is the most common preventable cause of hospital death
- More than 2 million patients suffer from VTE each year
 - More than 50% of these patients develop VTE in the hospital
- Pharmacologic prophylaxis reduces VTE by 50% to 65%

¹ <http://www.ahrq.gov/qual/vtguide/vtguideapa.htm>

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Background on VTE Risk Assessment

- **2008 The Joint Commission's Safety Goal¹** required hospitals to look at VTE risk as part of the overall anticoagulant therapy
- **American College of Chest Physician (ACCP)² & National Quality Forum (NQF)³** recommends an active strategy for VTE prevention, including risk assessment
- **Recently Center for Medicare & Medicaid Services (CMS)⁴** deemed VTE as non-reimbursable if it is hospital-acquired

¹ www.jointcommission.org
² Geerts WH et al. CHEST. 2008;133:381S-453S.
³ www.qualityforum.org
⁴ www.cms.gov

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Sibley Data: DVT Events 2008

- 215 total cases
- Predominant risk factors (over 85%)
 - Age greater than 40
 - Malignancy
- 15% (n = 32/215) occurred during hospitalization
 - 85% medicine patients
 - 30% received anticoagulation prophylaxis
- 16.3% (n = 35/215) occurred in patients who had been recently discharged from Sibley

DVT = Deep Vein Thrombosis

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VTE Risk in Oncology Patients

- When compared to non-oncology patients
 - 4-fold higher rate of VTE¹
 - 6.5-fold higher rate with chemotherapy¹
 - Represent 20% of all patients with VTE¹
 - In-patient VTE prophylaxis recommended^{1,2,3}
 - ONLY 45% will receive VTE prophylaxis¹

¹ www.nccn.org
² www.asco.org/guidelines
³ Geerts WH et al. CHEST. 2008;133:381S-453S.

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Purpose and Methods

- Improve appropriate VTE prophylaxis by 30% in oncology patients
- Retrospective and prospective, concurrent medical record review of pre- and post-implementation of standardized order set

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Methods: Inclusion & Exclusion

Inclusion	Exclusion
At least 18 years or older	Admitted for the treatment of VTE
Diagnosed with an active cancer	On anticoagulant treatment prior to admission
Admitted to the hospital for greater than 24 hours	Surgical patients

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Methods: Endpoints

- Primary endpoint
 - Change in appropriate prophylaxis
- Secondary endpoints
 - VTE events
 - Bleeding events
 - Other adverse events

Methods: Appropriate VTE Prophylaxis

- All criteria must be met:
 - Received prophylaxis during hospitalization
 - Remained on prophylaxis during hospitalization if not contraindicated
 - Received prophylaxis within 24 hours of admission
 - Prophylaxis:
 - Heparin 5,000 units SQ every 8 hours
 - Enoxaparin 30 mg SQ every 12 hours
 - Enoxaparin 30 mg – 40 mg SQ every 24 hours
 - Fondaparinux 2.5 mg SQ every 24 hours
 - Warfarin, INR goal 2 – 3
 - Sequential compression devices (w/ documented contraindications to pharmacological prophylaxis, or risk score of 0 – 1)

Methods: Statistical Analysis

- N = 63 for each category
 - Power of 80%
 - Detect 30% difference

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Process Timeline 2009 – 2010

- August: Initiate development of order set
- October: Approved by
 - Pharmacy and Therapeutics Committee (P&T)
 - Health Information Management
 - Institutional Review Board
- November: Pilot started and available on intranet
- December: Medical staff meeting
- January: Data collection initiated
- February: Nursing staff meeting
- April: Order set in admission package

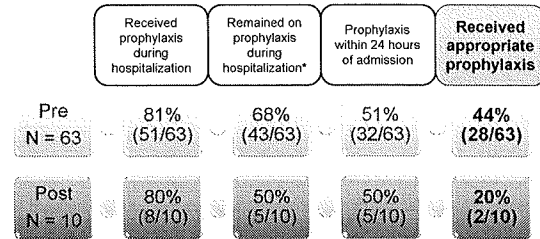
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Results: Enrollment

- Pre-implementation
 - August – December 9, 2009
 - 70% (n = 63/89) patients met criteria
- Post-implementation
 - December 10, 2009 – present
 - 47% (n = 10/21) patients met criteria

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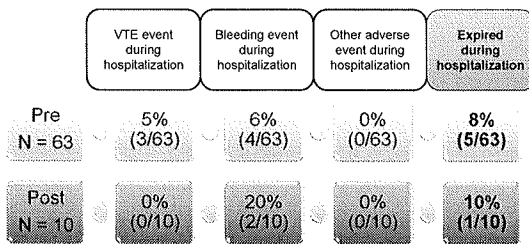
Results: Primary Endpoint



* If not contraindicated

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Results: Secondary Endpoints



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Discussion

- Study is still ongoing
- Post-implementation data did not show an improvement in appropriate VTE prophylaxis
- Limitations
 - Order set was not used
 - Order set use was optional
 - Delay in nursing communication & education

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Future Directions

- Follow-up results with P&T and Quality Improvement Committees
- Continue providing physician & staff education
- Continue quality improvement evaluation, audit and feedback
- Consider mandatory use of risk assessment

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Assessment Question

Which of the following statement regarding oncology patients is not true?

- Patients with cancer have a 4-fold higher rate of VTE
- Patients with cancer who are receiving chemotherapy have a 6.5-fold higher rate of VTE
- Patients with cancer represent approximately 50% of all patients with VTE
- Approximately 45% of hospitalized medically-ill patients with cancer will receive VTE prophylaxis

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References

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