Improving Adherence to VTE Prophylaxis in an Acute Care Setting

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Introduction

A clinical nurse leader (CNL) assesses a clinical microsystem to identify areas for improvement. This project illustrates how a CNL student functioning within the clinical microsystem of a 41 bed acute inpatient unit (M/S) using evidence-based information to develop, operationalize, and assess patient care processes can increase adherence to a hospital policy.

Microsystem Analysis:

2 process gaps → inconsistent VTE prophylaxis:

- Equipment availability
  - SCD machines
  - SCD sleeves
- Knowledge
  - VTEs
  - VTE prophylaxis policy

Problem

Core measure VTE-6 scrutinizes HA-VTE (TJC, 2015)

Hospital goal = decrease HA-VTE rate by 25% during FY 2016

The problem was identified through a 5P Microsystem Analysis during semester 1 of 3

Goals

Project Goals:

- Increase VTE and the prophylaxis policy knowledge by ≥ 25%
- Increase the adherence to the VTE prophylaxis policy by ≥ 25%

PICO

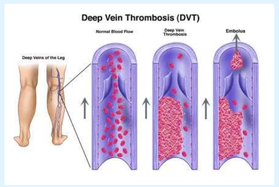
Population: Adult non-orthopedic patients admitted to M/S with a VTE risk score of > 5 not receiving pharmacological anticoagulation with enoxaparin.

Intervention:

1. Increase equipment accessibility
2. Education

Comparison: Pre and post adherence interventions

Outcome: Increased VTE prophylaxis



Abbreviations:

CNL = Clinical Nurse Leader

DVT = Deep Vein Thrombosis

FY = Fiscal Year

HA-VTE = Hospital Acquired Potentially-Preventable VTE

PE = Pulmonary Embolism

SCD = Sequential Compression

VTE = Venous Thromboembolism

Literature Review

VTE is the disease process of DVT and PE (CDC, 2012)

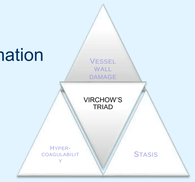
Best practice:

- Assess for risk factors
- Eliminate risk factors (McCance & Heuter, 2014)

- Annual national incidence of VTE = 2 /1,000 people (CDC, 2015)
- 2/3 of hospitalized adults are at risk for a VTE (Tsai J, 2015)
- Nationally, 60% of new VTEs occur within 6 months of hospitalization (CDC, 2011)
- Nationally, 10% to 30% of patients with a VTE will die within 1 month (CDC, 2015)

Virchow's Triad = 3 risk factors for blood clot formation

1. Venous stasis
2. Hypercoagulability
3. Vessel wall damage (McCone & Heuter, 2014)



SCD therapy reduces VTE risk by increasing blood flow to prevent

1. Venous stasis
2. Hypercoagulability (Lippincott Procedure, 2015)

- Surgical patients are at greater risk for VTE than medical patients
- Medical patients are more likely to get a VTE that results in death
- **WHY**? Medical patients do not receive consistent VTE prophylaxis (Tsai J, 2015; Wittkowsky & Nutuscu, 2014)

Perioperative VTE prophylaxis:

Pharmacological interventions	Nonpharmacological interventions
Antithrombin agents	Pneumatic compression therapy
Low-molecular-weight heparin	Mobilization
Warfarin	

(McCance & Heuter, 2014)

Anticoagulants contraindicated in patients with:

- Bleeding disorders
- Active liver disease
- Surgery for hip fractures

Pneumatic compression therapy is necessary to prevent VTEs in patient populations at high risk for bleeding (American Academy of Orthopaedic Surgeons, 2015; Wittkowsky & Nutuscu, 2014)

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Methodology

PHASE I: Establish baseline adherence to the VTE prophylaxis policy

- Adult chart audits to find patients meeting inclusion criteria
- 104 patient observations

Inclusion criteria:

- Adult
- Non-orthopedic
- Admitted to M/S
- VTE score ≥ 5
- Not receiving pharmacological anticoagulation with enoxaparin

Collected data:

1. VTE risk score
2. Anticoagulant name
3. SCD therapy was ON or OFF or REFUSED

PHASE II: Establish baseline knowledge about VTEs and the VTE prophylaxis policy

- Pre-test
  - Voluntary
  - Anonymous

PHASE III: Educational intervention and post-test

- Educate
  - 15 minute presentation
  - Addressed all topics on the pre-test
  - ≥ 80% of the M/S nursing staff
- Post-test
  - Identical to the pre-test
  - Given to the staff upon completion of educational intervention

The total percent correct scores on the pre-test compared to the total percent correct scores on the post test will provide a measurement of knowledge gained through the educational intervention

Phases I through III occurred during semester 2 of 3

PHASE IV: Evaluate the impact the interventions had on adherence to the VTE prophylaxis policy using the same methodology as in phase I.

- Adult charts audits to find patients meeting inclusion criteria
- 104 patient observations

The number of patients observed with SCD therapy on during phase I compared to the number of patients observed with SCD therapy on during phase IV will provide a measurement of adherence to the VTE prophylaxis policy

Phases IV occurred during semester 3 of 3

CONTINUOUS:

- Feedback to nursing staff; especially positive feedback to encourage and reinforce adherence to policy

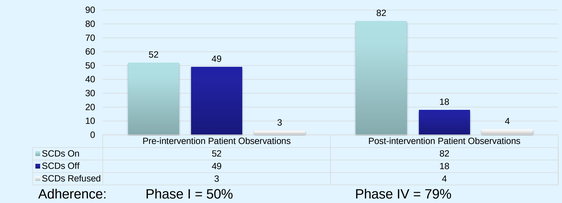
Results

Total percent correct score analysis:

26% improvement after the educational intervention

	Question	% correct pre-test (n=13)	% correct post-test (n=25)	% worse pre-test to post-test	% better pre-test to post-test
Q1	The following three factors (Virchow's Triad) contribute to blood clots: venous stasis, hypercoagulability and vessel wall damage	77	88		11
Q2	Venous thromboembolism (VTE) is the disease process of DVT and pulmonary embolism (PE)	77	100		23
Q3	VTEs are the most frequent postoperative complication: false (Correct Answer = VTEs are the 2nd most frequent post-op complication)	23	64		41
Q4	VTEs are the second most frequent factor extending length of hospitalization: true	85	100		15
Q5	VTEs are the third most frequent cause of unnecessary mortality: true	100	76	24	
Q6	VTEs are the fourth most frequent cause of excessive medical costs: false (Correct Answer = VTEs are the 3rd most frequent cause of excessive med costs)	15	50		35
Q7	What percent of hospitalized adults are at risk for VTEs? 66%	46	80		34
Q8	What is the national annual incidence of VTEs? 2 per 1,000 people	85	73	12	
Q9	30% of new VTEs occur within 6 months of hospitalization: false (Correct Answer = 60% of new VTEs occur w/in 6 months of hospitalization)	1	29		28
Q10	Between 10% and 30% of people diagnosed with a VTE will die within one month: true	54	92		38
Q11	How many people have a genetic risk factor for blood clots? Approximately 1 in 12 people	1	71		70
Q12	Surgical patients are at greater risk for VTE than medical patients: true	100	88	12	
Q13	Surgical patients are more likely to get and die from a VTE than medical patients: false (Correct Answer = Medical patients are more likely to get and die from a VTE)	0	68		68
Q14	SCDs and TED hose need to be worn at all times except when ambulating or bathing: true	100	84	16	
Q15	RNs, LPNs, and CNAs can chart in EPIC on the Flowsheet under Daily Care: true	92	100		8
Q16	Patients at high risk for bleeding include those with bleeding disorders, active liver disease, and surgery for a hip fracture	23	80		57
Q17	SCD therapy increases blood flow to prevent venous stasis and hypercoagulability	69	44	25	
Q18	Enoxaparin 40 mg SQ every 24 hours, or heparin 5000 units SQ every 12 hours and SCDs at all times except when ambulating or bathing: VTE risk score ≥5	0	36		36
Q19	Enoxaparin 40 mg SQ every 24 hours, or heparin 5000 units SQ every 12 hours, or SCDs at all times except when ambulating or bathing: VTE risk score 3 or 4	0	48		48
Q20	Ambulate: VTE risk score 1	0	72		72
Q21	Enoxaparin 40 mg SQ every 24 hours, or heparin 5000 units SQ every 12 hours, or SCDs at all times except when ambulating or bathing, or ted hose at all times except when ambulating or bathing: VTE risk score 2	0	40		40
	Average Score	45%	71%		30%

Adherence to SCD therapy improved by 29% after the interventions



Adherence: Phase I = 50% Phase IV = 79%

Conclusions

1. Staff knowledge increased from 45% to 71%, but not to 100%
2. SCD adherence improved from 50% to 79%, but not to 100%

Implications for Practice

How a CNL could improve and sustain outcomes:

A CNL creates change by using evidence-based information to develop, operationalize, assess patient care processes

- Continue the Plan-Do-Study-Act cycle to reinforce education by
  a. Increasing M/S staff involvement in educational intervention
  b. Including per diem and float staff in the educational intervention
  c. Re-evaluate adherence through patient observations

A CNL sustains change by engaging staff in the operalization of evidenced-based practices

- Work with nursing staff to educate patients:
  a. Create a patient education pamphlet
  b. Create scripting to increase comfort in promoting SCD use

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