

VTE Prevention: The Impact of Nursing Compliance with Sequential Compression Device Use

Cara Calderone, BSN, RN-BC and Allison Abramowski, BSN, RN-BC
UPMC Hamot, Erie, PA

Introduction

All hospital acquired conditions (HAC) are preventable and contribute to patient morbidity and mortality rates. Venous Thromboembolism (VTE) is a HAC, caused by deep venous thromboembolism and pulmonary embolism. VTE accounts for almost 10% of all hospital deaths, and over half of VTE incidents are hospital acquired. Appropriate intervention can significantly reduce the incidence of VTE by 70% for both medical and surgical patients (Assareh, Chen, Ou, Hillman, & Flabouris, 2016). Orders are written for VTE prophylaxis, nursing is to ensure implementation and documentation. Sequential Compression Devices (SCD) are used for mechanical VTE prophylaxis and anticoagulants for pharmacological prophylaxis. With looking at the annual VTE report, SCD and anticoagulant compliance data, there is a need to improve prophylaxis compliance to ultimately decrease the number of VTE incidents.

Methods

Education was provided by rounding with the staff on each unit and posting a VTE information fact sheets. Patient education on blood clot prevention was added to the daily plan of care. Each patient room was checked for presence of SCD pumps and replaced when necessary.

Materials

UPMC LIFE CHANGING MEDICINE

Blood Clots: How to Prevent Them

You are at risk for a blood clot. A blood clot is when blood does not flow normally through your blood vessels. This can be very serious and can even cause death. Blood clots can be caused by surgery, infections, lack of movement, and being in a hospital.

Other names for blood clots:

- Deep vein thrombosis (DVT) is a clot in the leg or arm.
- Pulmonary embolism (PE) is a clot in the lungs.

What you can do to prevent a blood clot:

- **Take medicines that thin your blood (also called anticoagulants)**
You may need to get this medicine as shots, pills, or both. Please talk to your care team if you feel that this is not a good choice for you.
- **Use the Sequential Compression Device (also called an SCD)**
Your doctor may recommend this machine to improve blood flow in your legs. The sleeves wrap around your legs and connect to a machine that fills and then removes air from the sleeves. It is very important to always use the machine when you are in bed or in a chair. Ask someone to remove the sleeves before walking.
- **Wear TED hose**
These stockings are given to some patients to push blood toward their heart.
- **Walk/Exercise your legs**
Get out of bed and walk as many times a day as you can. Exercise and movement help your blood to flow. Point your toes up to tighten your calves and then relax them. Do this as many times a day as you can.

When you leave the hospital you are still at risk. It is important to take your medicines, walk, and exercise your legs.

Learn more about blood clot prevention by watching a video on your phone or on a computer when you get home. Visit UPMC.com and type "Preventing Blood Clots in Leg Veins Video" in the search bar.

UPMC form #: UPMC-1857-0317

Anticoagulants for Venous Thrombo-Embolism (VTE) Prophylaxis: Myths vs. Facts

Medication Administration, Patient & Family Education, SCD's, Early & Frequent Ambulation

	Myth: Patients have the right to refuse. I don't need to notify the prescribing provider.	Facts: ✓ Provide the patient with education on the importance of VTE prophylaxis ✓ Ask the patient why they are refusing ✓ Notify the Physician or APP if the patient is refusing, alternative medications may be prescribed or education may be reinforced
	Myth: If a patient is unavailable at the time of dose it should be held until the next dose scheduled.	Facts: ✓ Lovenoxy and Heparin used for VTE prophylaxis can be given within half of the dose scheduled time ✓ Example: Heparin scheduled at 6am-2pm-10pm, patient is off the unit at 6am for MRI and returns at 9am, Heparin can be given up to 10am
	Myth: Patients who are able to sit in a chair or walk do not need anti-coagulants for VTE prophylaxis.	Facts: ✓ Anti-coagulants, mobility, SCDs, and patient/caregiver education when used in combination are the best protection for VTE
	Myth: Patient sleep should not be interrupted for anti-coagulants.	Facts: ✓ Administer early or late based on SMAT times ✓ Explain to the patient the importance of not missing a dose
	Myth: Anti-coagulants should be held for all procedure and surgeries.	Facts: ✓ Many procedures do not require anti-coagulants to be held pre or post ✓ Verify orders written to hold pre/post procedure surgery ✓ Clarify with proceduralist or surgeon if medications should be held ✓ Obtain order to hold if indicated
	Myth: Patients being discharged do not need to receive anti-coagulants.	Facts: ✓ Patients are at continued risk of VTE after they leave the hospital ✓ Patients continue anti-coagulants at home

Results

The overall SCD compliance CY18 70% and CY19 76%. Overall anticoagulation compliance CY18 90.3% and CY19 92.4%. Hospital wide VTE rate CY18 2.09 and CY19 2.47. Further looking at the annual number of discharges CY18 19,642 and CY19 19,850.

VTE Monthly Summary Report

CONFIDENTIAL
Purpose: Provide Hospital monthly level VTE with CMD Exclusions summary information
Data Source: CDB, CQII Package
Selection Criteria: (See documentation page for more detail)
Multiple Specialties
UPMC Hamot
Jan 1, 2019 - Dec 31, 2019
Assumptions: Inpatients with selected diagnosis in the primary or secondary position.
Report Date: Feb 26, 2020 12:50:37 PM Revision Date: 4-4-2018

Monthly Sum	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Summary
Discharges	1,618	1,573	1,716	1,681	1,750	1,634	1,673	1,773	1,685	1,639	1,513	1,585	19,650
VTEs	5	2	5	4	8	7	6	3	2	2	3	2	49
VTE Rate	3.09	1.27	2.91	2.38	4.57	4.28	3.59	1.69	1.18	1.22	1.98	1.26	2.47
Avg LOS	4.9	4.6	4.7	4.8	4.6	4.6	4.6	4.9	4.7	4.7	4.6	5.1	4.7

Conclusion

There was an increase in both SCD compliance and anticoagulation compliance during the calendar year, however, there was an increase in VTE incidences. There were over 200 more patient discharges from UPMC Hamot in CY19 than in CY18. Staff has increased compliance of VTE prophylaxis, however, there is more room for improvement to ensure patient safety. We will continue to educate nursing staff and patients, as well as collect hospital wide compliance data.

References

Assareh, H., Chen, J., Ou, L., Hillman, K., & Flabouris, A. (2016). Incidences and variations of hospital acquired venous thromboembolism in Australian hospitals: A population-based study. *BMC Health Services Research, 16*(1), 1–2.