

# EMR-Based Intervention to Improve Venous Thromboembolism (VTE) Risk Assessment and Prescribing Practices

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## Description

- Completion of VTE risk assessments is a key factor in the prevention of hospital-acquired VTEs
- Completion of VTE risk assessment and administration of prophylaxis within 24 hours of admission is a major hospital quality measure
- Internal Medicine house staff at Boston Medical Center (BMC) do not routinely complete a VTE risk assessment or order prophylaxis through the established order set
- House staff are over utilizing pharmacologic prophylaxis on low risk patients

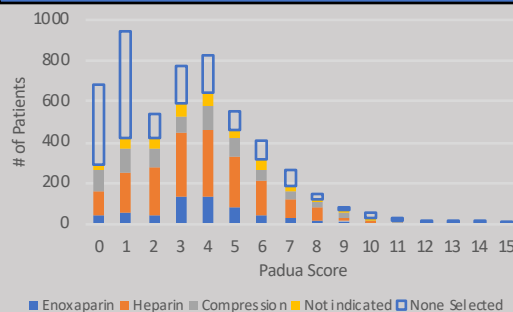
## Project Aim

- Improve VTE risk assessment completion rates on general medicine admissions from 70% in Jan 2018 greater than 90% by Dec 2018
- Decrease prophylaxis prescriptions for low risk patients (Padua score <4) from 89% between Jan and Apr 2018 to less than 20% by Dec 2018

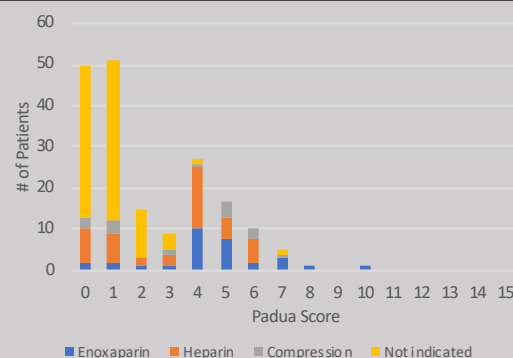
## Barriers

- No ownership for completion
- Intermediate risk not part of original Padua score
- Multi-step process
- Inconsistent scoring
- Able to order prophylaxis without assessing risk
- Suboptimal use of mechanical prophylaxis
- Frequent interruptive alerts (pop-ups)

## Baseline Data – Intervention by Padua Score (Jan-Apr 2018)



## Pilot Data – Intervention by Padua Score via New Process (Sep 2018)



## Adapted Padua Risk Assessment

Risk	Score
Active Cancer	3
Previous VTE	3
Reduced Mobility	3
Known Thrombophilic Condition	3
Surgery or Trauma in Prior 30 Days	2
Age > 70 Years	1
Heart Failure	1
Respiratory Failure/COPD Exacerbation	1
Acute MI or Ischemic Stroke	1
Inflammatory State: Acute Infection, IBD &/or Rheumatologic Disorder	1
Obesity (BMI > 30)	1
Ongoing Hormonal Treatment	1
ICU Admission	1

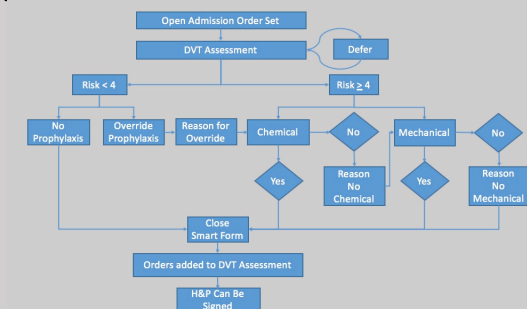
SCORE:  
 ≤ 1 = Low Risk (no prophylaxis recommended)  
 2-3 = Intermediate Risk (consider prophylaxis)  
 ≥ 4 = High Risk (prophylaxis or list contraindication)

Prophylaxis Choices:  
 Subcutaneous Heparin, Enoxaparin, Sequential Compression Devices

## Interventions

- Surveyed residents on barriers and recommendations
- Created clinical decision support (CDS) structure linking EMR data to smart form embedded within an admission order set
- Recommendations change based on calculated risk
- Eliminated intermediate risk category
- EMR mandated completion on admission
- Incorporated into the admission H&P

## New Process Flow



## Summary of Pilot Results

- 57% of eligible users are using the new assessment:
- 26% of low risk patients received prophylaxis
- 97% of high risk patients received prophylaxis

## Next Steps

- Expand pilot with ongoing education
- Provider-specific data on prescribing practices
- Culture change regarding prophylaxis in low risk
- Assess for increased in-hospital VTE

## References

- Barbar S et al. A risk assessment model for the identification of hospitalized medical patients at risk for venous thromboembolism: the Padua Prediction Score. J Thromb Haemost. 2010.
- Kahn SR et al. Prevention of VTE in nonsurgical patients: Antithrombotic Therapy and Prevention of Thrombosis, 9<sup>th</sup> ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2012.