Venous Thromboembolism (VTE) Prevention
A Sigma Nurse Leadership Academy Project

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Disclosures

No disclosures to report

VTE is one of the most common causes of severe maternal morbidity and mortality especially among those who undergo cesarean section…

- Approximately **30**% of all women undergo cesarean section
- Early and consistent intervention such as ambulation reduce the risk
- Patient Safety Bundle from Safe Health Care for Every Women has four area – Readiness, Recognition and Prevention, Response and Reporting/System learning
- What does that mean for WellSpan Health…..

Provider Guidelines

- To reduce the incidence of venous thromboembolism (VTE) in obstetrical patients and decrease the risk of associated maternal morbidity and mortality
- WCSL Guidelines developed based on clinical guidelines from CMQCC, AGOG, and ASA
- Review and approved by Women's Health CET.
- Standardized VTE risk assessment should occur throughout pregnancy, including these four important time periods:
  - Outpatient prenatal care
  - Antepartum hospitalization (non-delivery)
  - Immediately postpartum
  - Re-admission during postpartum period

Risk Assessment prenatal period

- Patients at high risk should be co-managed with maternal-fetal and/or hematology specialist
- Consider a prenatal consult with anesthesia.
- Discuss risks and benefits and engage in shared decision making with the patient before the initiating

Clinical History	Risk Level	Management
Low risk thrombophilia (isolated)	Low	No treatment
Low risk thrombophilia with family history of VTE		
Prior provoked VTE		
Prior VTE idiopathic	Medium	Prophylactic dose LMWH or UFH
Prior VTE with pregnancy or oral contraceptive		
Prior VTE with low-risk thrombophilia		
Family history of VTE with high-risk thrombophilia		
High risk or antiphospholipid syndrome (APS)		
Current VTE or other conditions requiring therapeutic dose of anticoagulation	HIGH	Therapeutic dose LMWH or UFH
Multiple prior VTE episodes		
Prior VTE with high-risk thrombophilia		
Prior VTE with APS		

Clinical Recommendation for Pharmacologic after Vaginal Delivery

- The biggest risk factor with Vaginal Delivery is
  - Medical history of VTE

    OR
  - Medical history of thrombophilia

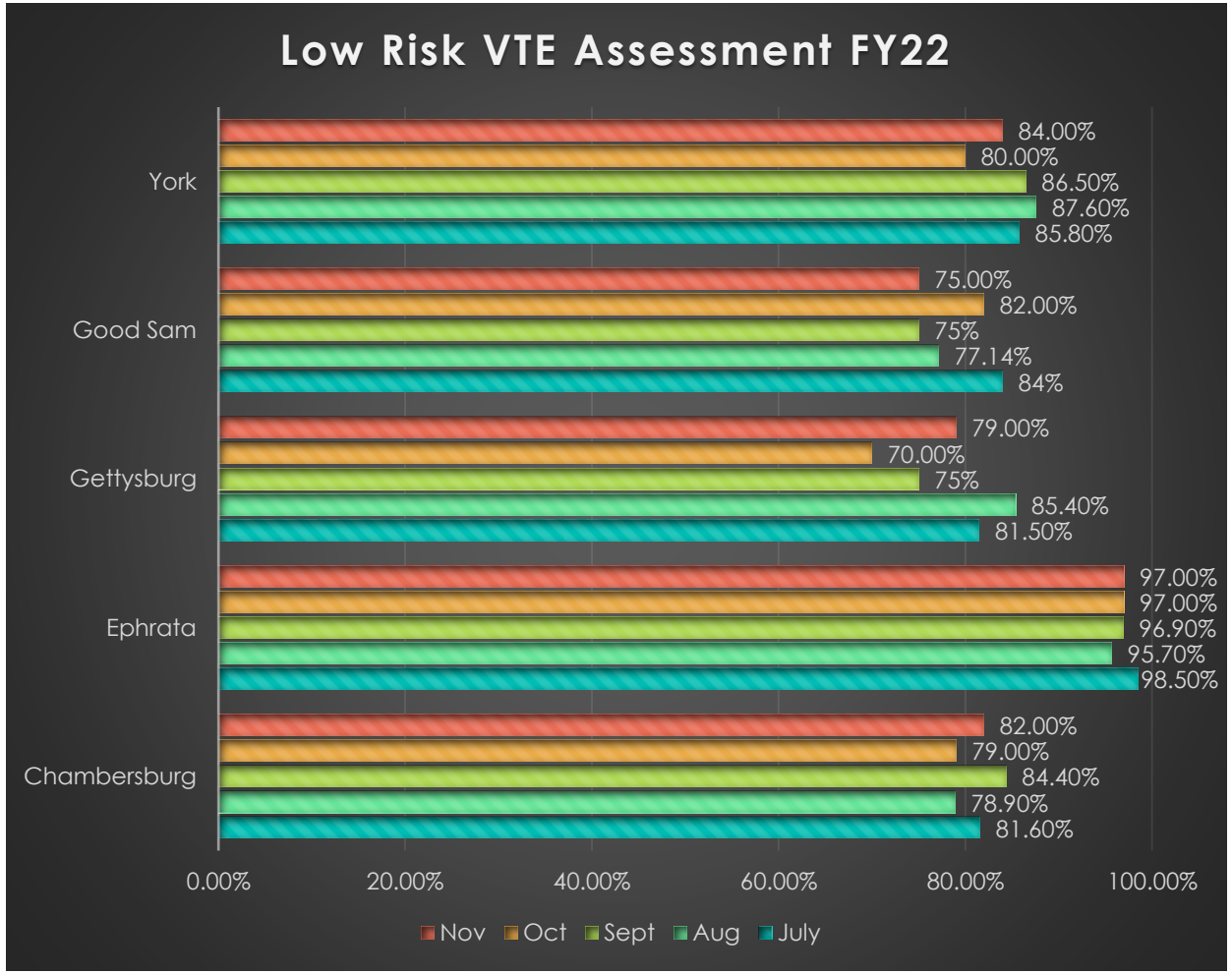
Clinical History	Risk Level	Anticoagulation
Encourage ambulation and avoid dehydration at all risk levels		
Delivery BMI ≥ 40 kg/m²	**LOW**	Mechanical prophylaxis placed prior to delivery and continued until fully ambulatory
Delivery BMI ≥ 40 kg/m² **PLUS** Antepartum hospitalization ≥ 72 hours anticipated currently or within past month **OR** **Delivery BMI ≥ 40 kg/m² PLUS** Low Risk Thrombophilia	**MEDIUM**	Mechanical prophylaxis placed prior to delivery and continued until fully ambulatory **PLUS** Prophylactic dose LMWH / UFH postpartum hospitalization **BMI ≥ 40 kg/m² plus thrombophilia** (consider LMWH/UFH continuation 6 weeks postpartum)
High risk thrombophilia with no prior VTE regardless of family history Prior provoked, idiopathic, or estrogen related VTE Low risk thrombophilia **AND** family history of VTE *ANY* single prior VTE **OR** Patients already receiving LMWH or UFH as outpatient Multiple prior VTE Prior VTE with High Risk or Antiphospholipid Syndrome (APS)	**HIGH**	Mechanical prophylaxis placed prior to delivery and continued until fully ambulatory **PLUS** Prophylactic dose LMWH / UFH postpartum in hospital and **continued until 6 weeks from date of delivery after discharge** **OR** Mechanical prophylaxis placed prior to delivery and continued until fully ambulatory **PLUS** Therapeutic dose LMWH / UFH postpartum **(Postpartum dose ≥ Antepartum dose)** in hospital and **continued until 6 weeks from date of delivery after *discharge***

Clinical Recommendation for Pharmacologic Prophylaxis after Cesarean Section

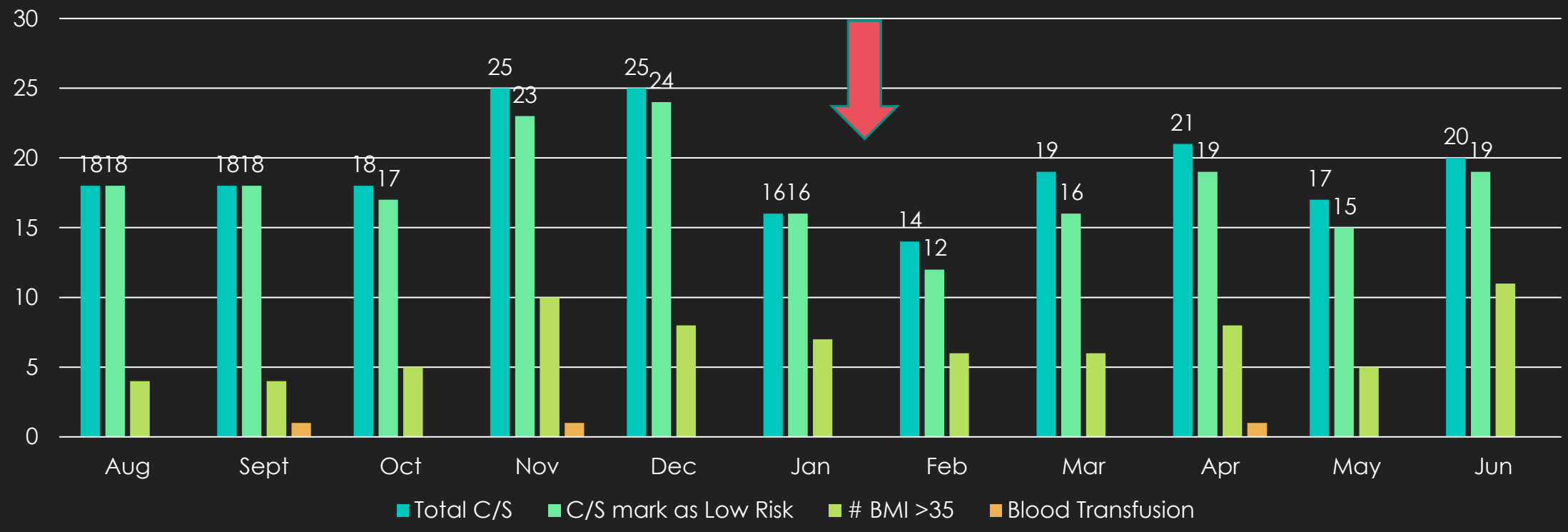
Major VTE Risk Factors	Minor VTE Risk Factors
☐ BMI > 35 kg/m^2 @ delivery	☐ Multiple gestation
☐ Low risk thrombophilia	☐ Age > 40
☐ Postpartum hemorrhage requiring:	☐ Postpartum hemorrhage ≥1000 ml
☐ Transfusion or further operation, (e.g. hysterectomy, D&C) or Interventional Radiology procedure	but not requiring: ○ Transfusion or further operation, (e.g. hysterectomy, D&C) or Interventional Radiology procedure
☐ Infection requiring antibiotics	☐ Family history of VTE (VTE occurring in a first-degree relative prior to age 50)
☐ Antepartum hospitalization ≥ 72 hours, current or within the last month	☐ Smoker
☐ Chronic medical conditions: Sickle Cell disease, Systemic Lupus Erythematosus, Significant Cardiac disease, active Inflammatory Bowel Disease, active cancer, Nephrotic syndrome	☐ Preeclampsia
Women with **one major or two minor risk factors** should receive in-hospital post cesarean pharmacologic prophylaxis	

Clinical History	Risk Level	Prophylaxis Regimen
Encourage ambulation and avoid dehydration at all risk levels. **All women having cesarean birth receive mechanical prophylaxis.**		
Not meeting medium or high risk criteria	**LOW**	Mechanical prophylaxis placed prior to cesarean and continued until fully ambulatory
Cesarean Delivery with 1 Major ***or*** **≥ 2** Minor Risk Factors (See Table 6)	**MEDIUM**	Mechanical prophylaxis placed prior to cesarean and continued until fully ambulatory **PLUS** Prophylactic dose LMWH / UFH postpartum, continue until discharge
High risk thrombophilia (including acquired) no prior VTE, regardless of family history Prior provoked, idiopathic, or estrogen related VTE Low risk thrombophilia **AND** family history of VTE **OR** single prior VTE Patients already receiving LMWH or UFH as outpatient Multiple prior VTE Prior VTE with High Risk thrombophilia (including APS)	 **HIGH**	Mechanical prophylaxis placed prior to cesarean and continued until fully ambulatory **PLUS** Prophylactic dose LMWH / UFH in hospital and continued until 6 weeks from date of delivery Mechanical prophylaxis placed prior to cesarean and continued until fully ambulatory **PLUS** Therapeutic dose LMWH / UFH postpartum (Postpartum dose ≥ Antepartum dose) in hospital and continued until 6 weeks from delivery date after discharge

WCSL LOW Risk VTE Assessment- All Deliveries



Assessment of C/S marked Low Risk for VTE (FY 22 Data)



Hover to discover more information

Height: 152.4 cm (5')
Last Wt: 113 kg (250 lb)
BMI: 48.82 kg/m² !

NO NEW RESULTS, LAST 36H

NO ACTIVE MEDS

Daily IP MME/Day: None
Level of Care: None

Last Values

	Most Recent Value	1/4/2022 1110	10/4/2021 0845	8/30/2021 0826
Height:	152.4 cm (5') as of 1/4/2022	152.4 cm (5')	—	—
Last Wt:	113 kg (250 lb) as of 1/4/2022	113 kg (250 lb)	—	—
Body Mass Index:	48.82 kg/m² ! 152.4 cm (5') as of 1/4/2022 113 kg (250 lb) as of 1/4/2022			
BP:	200/120 ! as of 8/30/2021	—	—	200/120 !
Temperature:	Not taken	—	—	—
Heart Rate:	76 as of 10/4/2021	—	76	—
Resp:	20 as of 10/4/2021	—	20	—
Dosing Weight:	None			

Me | Admission

DVT/VTE Prophylaxis

OB VTE Prophylaxis - C-Section Post-Op

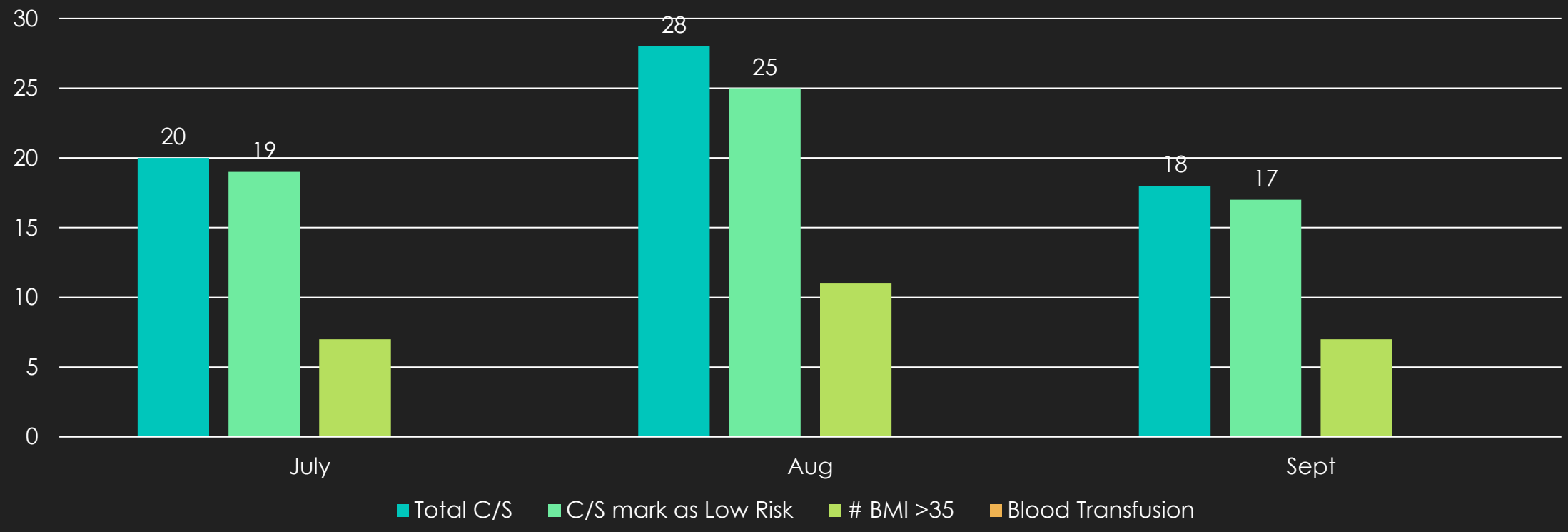
- OB Cesarean Birth - VTE Risk Assessment and Prophylaxis

- ○ Low Risk for VTE
- ○ Medium Risk for VTE
- ○ High Risk for VTE

Story Board for providers

Height: 152.4 cm (5')
Last Wt: 113 kg (250 lb)
BMI: 48.82 kg/m² !

Assessment of C/S marked Low Risk for VTE (FY23 Data)



Summary

- VTE is less of an area of focus than severe hypertension and hemorrhage yet is a significant risk factor for severe maternal morbidity and mortality.
- Provider education is necessary to ensure awareness of risk factors. Policies aimed at standardized risk stratification, patient education, and treatment are necessary to prevent VTE.