Clinical Practice Guideline for Initiation of Venous Thromboembolism (VTE) Prophylaxis In the Pediatric ICU

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- *Assess all patients at admission to PICU and upon any change in diagnosis/ symptoms/surgical severity*
- *Patient should receive standard intervention based on risk level within 24 hours of admission*
- *Use the order set for PICU Venous Thromboembolism Prophylaxis Orders in EPIC*
- *For patients with Acute VTE or on indefinite therapeutic anticoagulation at baseline (ex: APLA, IVC atresia, etc), please refer to VTE Treatment Guideline*

*Assessment	Low Risk	At Risk		High Risk
Mobility Status	Baseline	Baseline	Altered	Altered
VTE Risk Factors	None	1 or more	0 - 1	2 or more

Intervention	Low Risk	At Risk		High Risk
Encourage Ambulation/Mobility	X	X	X	X
PT/OT		X	X	X
SCD and/or Compression Stockings**			X	X
Anticoagulation Prophylaxis *(see Pharmacologic Considerations below)*				X

***Mechanical VTE prophylaxis indicated for patients >10 years*

*adapted from http://www.solutionsforpatientsafety.org/wp-content/uploads/SPS-Recommended-Bundles.pdf

Mobility Definitions:

Baseline*-Usual state of ambulation or mobility*

Altered*- Intubation, temporary inability to ambulate freely, includes an acute state of altered mobility or due to pharmacologic interventions, or injury. Expected immobility ≥72 hrs.*

*VTE Risk Factors

- Antiphospholipid Antibody syndrome
- Braden Q ≤ 16 in the past 12 hours
- Burns >50% body surface area
- Cancer or malignancy, active
- Critically ill
- CVL or PICC, recent or current
- Cyanotic heart disease or low-flow state
- Dehydration, severe
- DKA
- Exogenous estrogen / oral contraceptive use, current or within 2 past weeks
- Family history of VTE in 1st degree relative
- Hyperosmolar state
- Immobilization, chronic
- Infection or sepsis (acute)
- Inflammatory bowel disease (IBD)
- Inherited thrombophilia
  - Deficiencies: Protein C, S, or antithrombin
  - Gene mutations: Factor V Leiden or prothrombin
- Obesity:
  - < 18 years old & BMI >95th percentile
  - ≥ 18 years old & BMI >30
- Personal history of DVT/PE/Stroke
- Protein-losing disorder: nephrotic syndrome, chylous effusion, enteropathy
- Spinal cord injury
- Surgery (within last 30 days)
- Systemic lupus erythematosus (SLE)
- Trauma

Pharmacologic Considerations

Pharmacologic Prophylaxis

Enoxaparin

- Patients < 2 months: 0.75 mg/kg subcutaneous BID, max dose 30 mg
- Patients ≥ 2 months: 0.5mg/kg subcutaneous BID, max dose 30 mg
- Patients > 60 kg: 40mg subcutaneous Daily Or 30mg subcutaneous BID
- Patients > 60 kg **AND** BMI >99 percentile: 40 mg subcutaneously BID

Unfractionated Heparin

- Patients <1 year: 20 units/kg/hr IV
- Patients ≥ 1 year: 10 units/kg/hr IV

Continue Enoxaparin until Patient can ambulate 150 feet, at baseline mobility, &/or Risk Factors are resolved

Contraindications to Pharmacologic Prophylaxis

- Ongoing or uncontrolled bleeding
- Uncorrected coagulopathy (PLT<50,000; Fibrinogen<100; INR>1.5; or PTT>2x control)
- Acute arterial ischemic stroke
- Suspected or known intracranial, intraspinal, or paraspinal hematoma
- Major allergy to pork products (LMWH only)
- History of heparin induced thrombocytopenia
- Intracranial monitoring (EVD/Bolt)
- CNS drain (epidural catheter/other)
- Risk for major surgical bleeding within 24-48 hrs
- Family/Personal history of bleeding disorder
- Invasive procedure within 24 hours

Obtain clearance from Neurosurgery to start pharmacologic prophylaxis in patients with spinal or cranial hemorrhage

Monitoring

- Monitor heparin assay if Cr clearance < 30 mL/min
- *Consider* monitoring heparin assay if:
  - Cr clearance < 60 mL/min **OR**
  - Patient is < 12 months and UOP is < 1 mL/kg/hr
- Heparin assay for LMWH should be 0.2-0.5

Consider consulting pharmacy or hematology