Ascension

Pediatric Venous Thromboembolism (VTE) Prophylaxis Guideline

Purpose: This guideline provides the minimum standard of care for any patient on the Pediatric Trauma Service with suspected or confirmed injury and those at risk for deep vein thrombosis.

Definitions:

1. Altered mobility: A permanent or temporary state in which the child has a limitation in independent, purposeful physical movement of the body or of one or more extremities.
2. Deep Vein Thrombosis (DVT): A blood clot (thrombus) that was initially formed in a deep (non-peripheral) vein.
3. Thrombo-Embolic Deterrent Hose (TED): Elastic stockings, either knee- or thigh-high.
4. Risk category: Refer to VTE Risk Factors algorithm
    - Low risk: No VTE risk factors
    - Moderate risk: Multiple risk factors for VTE in the absence of altered mobility or has altered mobility with one or fewer additional risk factors.
    - High risk: Altered mobility plus two or more additional risk factors
5. Sequential Compression Device (SCD): A device designed to intermittently squeeze blood from underlying deep veins in the leg upon compression of an inflatable sleeve, and to allow the blood to flow again when it decompresses.
6. Venous Thromboembolism (VTE): A blood clot (thrombus) in a vein or one that has broken free and is carried in the bloodstream (embolus).

Guideline:

- It is recommended that patients age 10–17 years be assessed for VTE risk factors at the time of inpatient admission and reassessed at 48 – 72 hours of hospitalization.
- Based on that assessment, the patient is assigned a risk category (low, moderate, high).
- This should be documented in the patient's medical record.
- It is recommended that VTE prophylaxis be administered based on risk category as soon as feasible, but within 24 hours of assessment, unless there are contraindications (See algorithm).
- Refer to the algorithm for Risk Category Assessment and Prophylaxis for VTE.Scope:

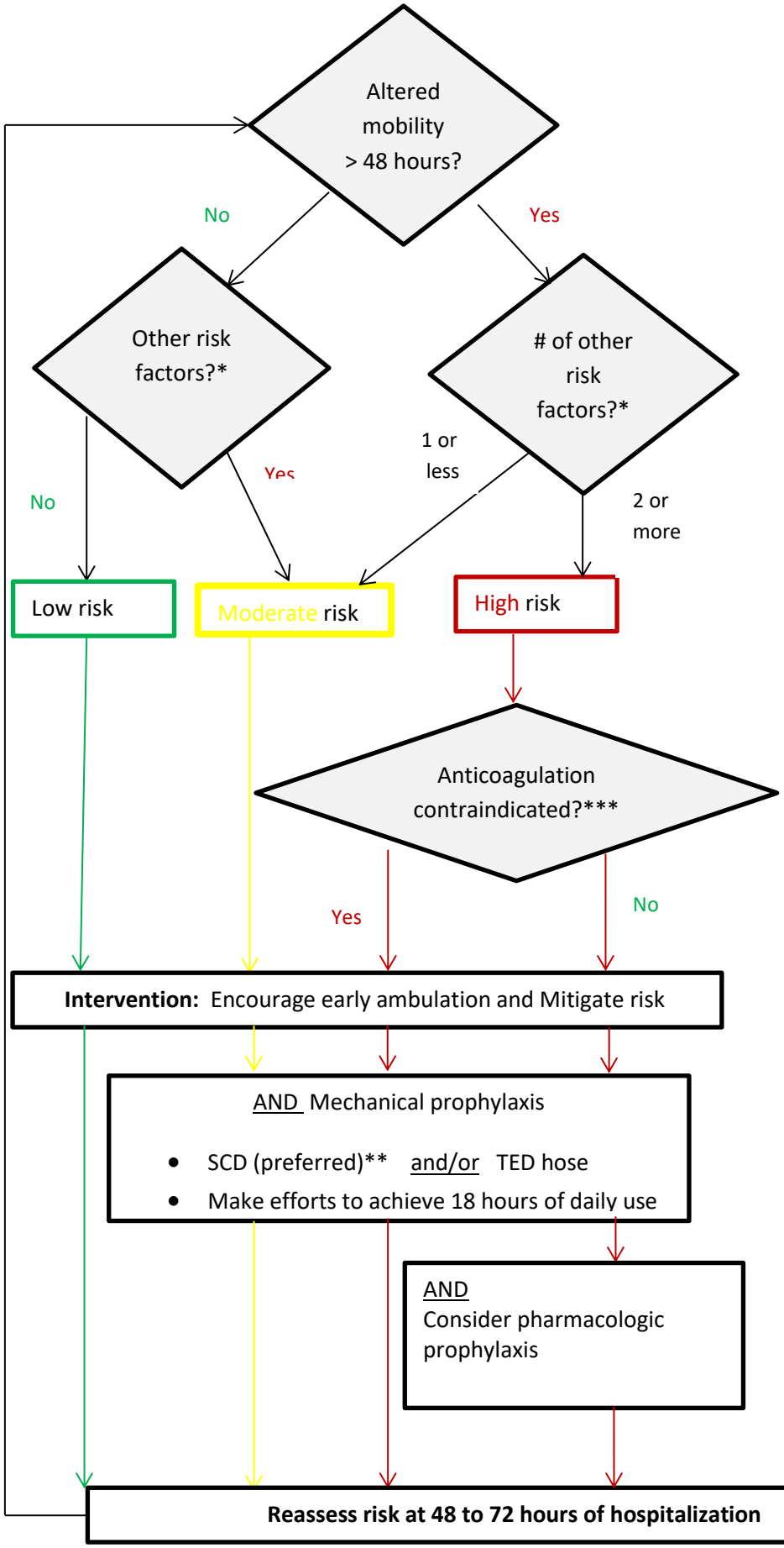
RISK ASSESSMENT FOR THROMBOSIS 10-17 years old (to be completed by MD, RN or APN)

Risk Factors?	History ☐ Personal history of blood clot ☐ Family history of clotting disorder High-risk Medical Conditions ☐ Known clotting disorder ☐ Blood stream infection (currently on antibiotics for positive blood culture) ☐ Cancer ☐ Chronic inflammatory condition (ie. Crohn's, Ulcerative Colitis, Lupus) ☐ Nephrotic syndrome ☐ Trauma patient if > 1 lower extremity (LE) fracture, pelvic fracture or spinal cord injury Medications ☐ Estrogen (ie. birth control) in past 2 months (Depo shots don't contain estrogen) Physical Exam ☐ Obesity (BMI >95th percentile) ☐ PICC or central line	Total number of risk factors:
Contraindications to SCD (sequential compression device)?	☐ Current DVT ☐ Fracture of lower extremity (LE) ☐ Skin conditions affecting LE (burn, dermatitis, wound, epidermolysis bullosa)	☐ Yes (if any checked) ☐ No
Contraindications to Lovenox?	☐ Active bleeding ☐ Known bleeding disorder ☐ Epidural or lumbar puncture in the last 12 hours ☐ Platelets <50,000/mm or heparin induced thrombocytopenia ☐ Brain tumor ☐ Pelvic fracture in last 48 hours ☐ Recent or scheduled neurosurgical procedure within 48 hours ☐ Uncontrolled hypertension	☐ Yes (if any checked) ☐ No
Equal or greater than 2 Risk Factors	Anticipated altered mobility > 48 hours? ☐ Bedrest or significant activity restriction ☐ Any line or tube that restricts mobility (id. Epidural, foley, NG to continuous suction, chest tube, EVD, mechanical ventilation)	☐ Yes = **HIGH** Risk ☐ No = **MODERATE** Risk
0-1 Risk Factor	Anticipated altered mobility > 48 hours? ☐ Bedrest or significant activity restriction ☐ Any line or tube that restricts mobility (id. Epidural, foley, NG to continuous suction, chest tube, EVD, mechanical ventilation)	☐ Yes = **MODERATE** Risk ☐ No = **LOW** Risk

If NO contraindications, the following interventions (and orders) are indicated:

PRE-OP ORDERS	
	Recommended Intervention/Order
ALL patients with surgery scheduled for > 60 minutes	☐ Intra-op SCD – apply in pre-op/holding area

POST-OP or ADMISSION ORDERS	
Risk Category	Recommended Intervention/Order
LOW Risk	None-encourage early ambulation
MODERATE Risk	☐ SCD – aim for 18 hours of use
HIGH Risk	☐ SCD - aim for 18 hours of use ☐ Lovenox *(first dose 12 hours after surgery and hold 12 hours prior to surgical procedure) • < 50 kg= 0.5 mg/kg/dose SQ BID • > 50 kg= 30 mg SQ BID or 40mg SQ daily *If renal dysfunction, consider decreasing dose and checking LMWH level 4 hours after 2nd or 3rd dose (goal 0.1-0.3 unit/ml, see BESt statement for management of LMWH in reference for more details)



***VTE Risk Factors**

Blood stream infection
Central Venous Catheter (including non-tunneled, tunneled and PICS)
History of venous thrombosis
Hyperosmolar state (serum osmolality > 320 mOsm/kg)
Inflammatory disease s(ie. IBD, SLE)
Medications: asparaginase, estrogen use (within past 2 months)
Obesity (BMI >95th percentile)
Oncologic diagnosis
Ortho procedures: hip or knee reconstruction
Nephrotic syndrome
Thrombophilia – known, or family history of clots
Trauma : > 1 lower extremity long bone fracture, complex pelvic fracture or spinal cord injury

****Contraindications to Mechanical Prophylaxis**

DVT, suspected or existing (can use TED hose)
Extremity to be used has acute fracture
Extremity to be used has PIV access
Skin conditions affecting extremity
Unable to achieve correct fit due to patient size

*****Contraindications to Anticoagulation**

Absolute:
Bleeding disorder, known or tendency
Hemorrhage, evidence of or high risk of
Platelet count unable to be sustained >50,000

Relative:
Intracranial mass
Lumbar puncture of epidural catheter removal in prior 12 hours
Neurosurgical procedure
Pelvic fracture within past 48 hours
Uncontrolled hypertension

Review/Revision History:

Review/Revision Date:	Approved by:
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