MANAGEMENT OF ACUTE DVT/PE
CLINICAL PROTOCOL

- This is an evidence-based protocol and should be adhered to whenever possible. However, it should not supersede clinical judgement and some patients and/or clinical scenarios may warrant protocols deviations. Clinician documentation of the rationale for the deviation(s) is helpful and encouraged.

- Thrombosis and Hemostasis Stewardship service
    - Available via TigerConnect or phone (505-810-8302) daily **0700-1700**, including weekends and holidays

Purpose:

- Risk stratify patients with acute VTE
- Delineate initial anticoagulation strategies
- Facilitate expert consultation (e.g., H.E.L.P. Team) for patients who may benefit from advanced interventions
- Determine treatment setting (inpatient versus outpatient) to optimize patient care and resource utilization

Scope:

- As of March 2023, a **pilot acute VTE consult service is available 0700-1700 Monday-Friday** for patients under the care of the **Emergency Department (ED) or Urgent Care Clinic (UCC)**
- A Tiger alert will be sent out to the Acute DVT and/or Acute PE Alert teams for any patient diagnosed with an acute VTE during these pilot consult hours and in these clinical areas.
- Actions specific to the UCC:
    - After 1700, patients in the UCC with acute VTE should be sent to the ED for management
    - Any patients in the UCC that report or demonstrate signs and/or symptoms of PE (e.g., chest pain, shortness of breath, etc.) should be sent to the ED in case a chest CT is needed
- **For all other acute DVT or PE diagnosed outside of the pilot** consult hours (before 0700 or after 1700) and/or clinical areas (ED and UCC), providers will need to contact the Thrombosis Stewardship Service, H.E.L.P. team and/or vascular service as indicated. (See treatment algorithms below)

Prioritizing outpatient management of low risk DVT and PE

- For patients with low risk DVT and/or PE, VTE guidelines recommend outpatient management over hospitalization whenever possible.[1,2]
- VTE guidelines and core elements of anticoagulation stewardship emphasize the criticality of access to medications, ability to access outpatient follow-up care and optimized transitions of care for all acute VTE patients that are to be managed in the outpatient setting.[1,2,3]
- Additionally, it is beneficial to manage low risk VTE patients in the outpatient setting whenever possible, as this improves patient flow through the ED and increases bed availability.
- To be considered for outpatient management of VTE, patients must meet eligibility criteria (see below).
    - Patients not meeting all criteria warrant multidisciplinary discussion and may need to be admitted.
- For low risk VTE patients discharging outside of Thrombosis and Hemostasis consult hours, the provider is to work with the UNMH discharge pharmacy to help determine medication insurance coverage and provide initial home supply of anticoagulant(s) whenever possible.
- Care transitions coordinators and case managers should help arrange follow-up appointments with PCPs and anticoagulation clinics prior to the patient leaving the ED or UCC.

Reviewed and approved by: UNMH P&T Committee, Thrombosis & Hemostasis Steering Committee
Last updated: July 2023

Acute DVT Pathway

Confirmed (or high suspicion) DVT in patient ≥ 18 years of age in the ED or UCC

Initiate therapeutic enoxaparin 1 mg/kg BID (preferred)
(If CrCl < 30 ml/min, initiate high-intensity heparin protocol)

Prior to initiating AC, minimum assessment should include baseline labs (e.g., INR, aPTT, SCr, etc.) and clinical history

If after hours admit to VTE Obs

The ED pharmacist will not be able to routinely assist with discharge of VTE patients outside of thrombosis consult hours due to other responsibilities

Automated Tiger notification to Thrombosis Stewardship Service for positive DVT

Does patient also have PE? — Yes → See PE pathway on next page

No

Evidence of iliofemoral DVT and/ or concern for phlegmasia? — Yes → **Vascular Consult**

No

Does patient meet outpatient DVT management eligibility criteria? — No ← Urgent/emergent vascular intervention planned? → Yes → **Admit**

1. Age ≥ 18 years
2. Adequate renal function (CrCl >30 ml/min)
3. No other indication for hospitalization
4. No baseline coagulopathy (INR >1.5, aPTT > 40 sec, Platelet count < 50K)
5. Does not meet criteria for thrombolysis or thrombectomy
6. No extensive DVT (swelling of entire limb, phlegmasia, iliofemoral etc.)
7. Not pregnant
8. No recent or active bleed (w/in last 3 months)
9. No recent surgery (w/in last 4 weeks)
10. No history of HIT

Yes

Other social barriers to outpatient management (e.g., homelessness?) — Yes → **Admit**

No

Discharge checklist for outpatient DVT treatment

- ☐ Follow-up w/Thrombosis Stewardship re: preferred outpatient anticoagulant regimen and coordination of care transitions
- ☐ Consider prescribing fitted compression stockings (30-40 mmHg) to alleviate symptoms of post-thrombotic syndrome (PTS)
- ☐ Obtain patient's phone number (cell preferred) and enter in Powerchart 'sticky note'
- ☐ Send outpatient anticoagulation script to UH Discharge Pharmacy (505-272-4239)*
- ☐ Confirm DOAC eligibility:
  - Assess medication compliance
  - Adequate hepatic and renal function
  - No major DOAC drug interactions (e.g., azoles, rifampin, phenytoin, carbamazepine)
  - No DOAC contraindications (e.g., mechanical heart valves, antiphospholipid syndrome)
  - Weight > 50 kg
  - Patient is not pregnant or breastfeeding
  - DOAC is covered by insurance
- ☐ Ensure first month's supply of anticoagulation is delivered to bedside whenever possible
- ☐ Ensure anticoagulation medication education has been performed by RN or pharmacist
- ☐ Send referral to appropriate anticoagulation clinic (not all patients are eligible to be seen at UNMH Antithrombosis Clinic) and confirm follow up appointment

UH Discharge Pharmacy Hours:
Monday - Friday: 0800-1800
Sat/Sun/Holidays: 0900-1700

*If discharged from ED or UCC after Discharge Pharmacy hours, ensure 1st dose of anticoagulant prior to discharge, send RX to UH Pharmacy & instruct patient to pick up next AM

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Acute PE Pathway

Confirmed (or high suspicion) PE in patients ≥ 18 years of age in the ED or UCC

High-risk/Massive PE:

SBP <90 for ≥ 15 mins
OR
Needs pressors or inotropes
OR
HR <60 with s/sx of shock
OR
Recent cardiac arrest
OR
Presumed PE based on history

→ Initiate high-intensity heparin protocol

→ H.E.L.P. consult

→ 50 mg IV tPA on standby
(see 'Submassive/Massive PE' PowerPlan)
AND
ECMO Team activation
AND
Admit to CTVICU

→ Inpatient Pulmonary consult

→ Consult Thrombosis Stewardship via Tiger Connect for longer-term AC plan and care transitions coordination

Intermediate risk/ Submassive PE:

RV/LV >1
AND
(+) troponin and/or BNP >500
AND
SBP >90

→ Initiate enoxaparin 1 mg/kg BID (preferred)
If CrCl < 30 ml/min, use high-intensity heparin protocol

→ H.E.L.P. consult

→ Calculate sPESI

→ Highly symptomatic due to PE?
(e.g., O_2 > 6L, chest pain, HR > 110)

- Yes → Admit to CTVICU
AND
Vascular surgery consult
AND
Potential sheath placement
→ ± urgent PE thrombectomy vs. catheter-directed thrombolysis
- No → SAC Medicine admission
→ - Main PA or lobar clot burden
- RV/LV >1.4
- elevated sPESI score
  - Yes → Vascular surgery consult → ± urgent PE thrombectomy vs. catheter-directed thrombolysis
  - No → ***NO*** vascular surgery consult indicated. Anticoagulation per Thrombosis Stewardship

Low-risk PE:

Does not meet massive or submassive criteria

→ Initiate enoxaparin 1 mg/kg BID (preferred)
If CrCl < 30 ml/min, use high-intensity heparin protocol
and admit to VTE Obs (if off hours)

→ Automated Tiger notification to Thrombosis Stewardship for positive PE

No H.E.L.P. consult indicated | **No Inpt Pulm consult indicated**

→ Multidisciplinary discussion
AND
Assessment for outpatient PE management eligibility including sPESI = 0 (see below)

→ If eligible for outpatient management, discharge from ED once all elements of VTE discharge checklist have been addressed by Thrombosis Stewardship

Discharge checklist for outpatient PE treatment

- ☐ Massive and submassive PE: Ensure pulmonary input has been obtained for appropriate post-hospitalization follow up[4]
- ☐ Follow-up w/Thrombosis Stewardship re: preferred outpatient anticoagulant regimen and coordination of care transitions
- ☐ Obtain patient's phone number (cell preferred) and enter in Powerchart 'sticky note'
- ☐ Send outpatient anticoagulation script to UH Discharge Pharmacy (505-272-4239)*
- ☐ Confirm DOAC eligibility (see DVT checklist above)
- ☐ Ensure first month's supply of anticoagulation is delivered to bedside whenever possible
- ☐ Ensure anticoagulation medication education has been performed by RN or pharmacist
- ☐ Send referral to appropriate anticoagulation clinic (not all patients are eligible to be seen at UNMH Antithrombosis Clinic) and confirm follow-up appointment

1. Stevens S, et al. Antithrombotic Therapy for VTE Disease. CHEST 2021. https://doi.org/10.1016/j.chest.2021.07.055
2. Konstantinides SV, et al. 2019 ESC Guidelines for management of acute PE. EHJ 2020. https://doi.org/10.1093/eurheartj/ehz405
3. Core Elements of Anticoagulation Stewardship. https://acforum.org/web/education-stewardship.php
4. Boon G et al. Essential aspects of the follow-up after acute PE. RPTH 2020. https://doi.org/10.1002%2Frth2.12404

SIMPLIFIED PE SEVERITY INDEX (PESI)	**PT**
Age > 80 years	1
History of cancer	1
Chronic cardiopulmonary disease	1
Pulse ≥ 110 beats/min	1
Systolic blood pressure <100mmHg	1
Arterial oxyhemoglobin saturation level <90%	1

Score of ≥1 = high risk of 30-day mortality
Score of 0 = low risk of 30-day mortality

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