COVID-19 patients receive anticoagulation, unless bleeding contraindications - thoroughly consider and factor into the decision-making a patient’s bleeding risk factors.

**Group A**
- Full-intensity
  - Confirmed DVT or PE or other established reason for therapeutic anticoagulation (AF, mechanical heart valves replacement, etc.);
  - High suspicion of DVT/PE, but objective documentation cannot be obtained.
  - Renal failure patient on dialysis with repetitive clotting of dialysis tubing.

**Group B**
- Intermediate-intensity
  - Patient with very high D-dimer (> 2,500 ng/mL [i.e. ca. 10x upper limit of normal] with UNC assay)\(^1\)

  ** Either Enoxaparin** 0.5 mg/kg q 12 hr (attn: renal fx)

  ** or **

  ** UFH 60 U/kg bolus, then 12 U/kg/hr**
  - Target “hep correlation” or anti-Xa: 0.3-0.7 U/ml (preferably 0.5-0.7 U/mL)

**Group C**
- Lower-intensity
  - All patients who do NOT have a clear indication for full-dose anticoagulation (= Group A), and are not in Group B.
  - Patients in Group C have D-dimer < 2,500 ng/mL (i.e. < ca. 10x upper limit of normal) with UNC assay)\(^2\).

**UFH monitoring:**
- Test both, aPTT and “Heparin-unfractionated” (anti-Xa) test for first 48 hrs
- Assess how well these two tests correlate
- If good correlation, then use aPTT; if poor correlation: use “Heparin-unfractionated” (anti-Xa) test.

**Either Enoxaparin 1 mg/kg q 12 hr (attn: renal fx)**

** UFH 80 U/kg bolus, then 18 U/kg/hr**
- Target “hep correlation” or anti-Xa: 0.3-0.7 U/ml (preferably 0.5-0.7 U/mL)

**Modified IMPROVE VTE risk score**

| Presence VTE | 3 |
| Presence Xa | 3 |
| Known thrombophilia | 2 |
| Current lower limb paralysis or paresis | 1 |
| History of cancer (within 5 years) | 1 |
| Obesity (BMI > 30 kg/m²) | 1 |
| Complete immobilization ≥ 1 day | 1 |
| Age ≥ 85 yrs | 1 |
| Pregnancy/ breastfeed | 1 |
| History of DVT or PE | 1 |

**COVID-19 patients discharged from hospital meeting below criteria:**

- Consider Xarelto\(^\text{®}\) 10 mg once daily (FDA-approved for outpatient indication), Eliquis\(^\text{®}\) 2.5 mg bid (off-label), or prophylactic heparin product for 30 days and until mobile.

**After hospital discharge**\(^3\) (applies to Groups B and C)
- Modified IMPROVE-VTE score ≥4; or
- Modified IMPROVE-VTE score ≥2 and D-dimer level ≥2 times the upper limit of normal; or
- Age ≥75 years; or
- Age >60 yrs and D-dimer level ≥2x upper limit of normal; or
- Age >40-60 yrs, and D-dimer level ≥2x upper limit of normal, and previous VTE or cancer.

- Pregnancy / lactation in COVID+ patients:
  - Details: UNC Maternal-Fetal-Medicine guidance: [https://be.unc.edu/3WyYtmg](https://be.unc.edu/3WyYtmg)
  - Preferred anticoagulants during pregnancy are heparin compounds.
  - Management during labor and delivery: Collaboration MFM and Hematology.

---

\(^{1}\) If a Group B patient's D-dimer on daily f/u testing falls to ≤ 2,500 ng/mL, consider keeping patient at intermediate-intensity dosing.

\(^{2}\) If a Group C patient’s D-dimer on daily f/u testing increases to > 2,500 ng/mL, consider repeat testing to determine a trend and moving to intermediate-intensity dosing.

\(^{3}\) Further guidance on discharge, modified IMPROVE risk score, or pregnancy considerations per NIH COVID-19 Consensus Anticoagulation Guidelines. If there are management concerns, a hematology consult can be obtained.