

Translating the 2026 AHA/ACC Acute Pulmonary Embolism Guidelines into Pharmacy Practice

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June 22, 2026

Article Summary: The recent AHA/ACC guideline for acute pulmonary embolism (PE) recommends low-molecular-weight heparin (LMWH) over unfractionated heparin (UFH) for patients who require initial parenteral therapy.

PE guidelines: Why now?

The AHA and the ACC have published their first clinical practice guideline on evaluating and treating PE.¹ Until now, providers relied on two documents. The 2011 AHA scientific statement² introduced the clinical categories “low-risk,” “submassive” and “massive” acute PE. The 2019 European guidelines³ redefined the categories as “low-risk,” “intermediate-risk” and “high-risk.” The lack of standard language for broad risk categories made it difficult to apply research findings to real clinical scenarios.

New clinical categories system

The current guideline aims to create more specific risk categories and better identify patients with impending cardiopulmonary failure (Figure 1). This article will focus on



anticoagulation recommendations for inpatients in Category C-E. Note that oral anticoagulation will be discussed in a separate article.

Anticoagulation

Since 1960 we have used anticoagulants to treat PE.⁴ For inpatients, this means UFH or LMWH. One of the biggest guideline changes for pharmacists is the following statement:

“In patients with acute PE in categories C1-E1 who require parental anticoagulant therapy initially, LMWH is *recommended* over UFH to reduce recurrent venous thromboembolism (VTE) and major bleeding.”⁵

In addition to assessing efficacy and bleeding-risk, the guideline considers the reliable pharmacokinetic profile and simpler dosing scheme of LMWH, as well as the risk of heparin-induced thrombocytopenia with UFH.

In categories D and E, physicians may consider advanced therapies — systemic thrombolysis, catheter-directed thrombolysis (CDL) and mechanical thrombectomy (MT) — if standard treatment fails. Many physicians are reluctant to use LMWH because they worry it could complicate procedural timing. However, therapeutic or subtherapeutic anticoagulation is needed during these procedures. To address this concern, the guideline states:

“In patients with acute PE undergoing CDL, concurrent therapeutic anticoagulation (LMWH or UFH) or subtherapeutic anticoagulation (UFH) is *recommended over no* anticoagulation to prevent recurrent PE.”⁶

During a procedure the interventionist can check activated clotting time and give more heparin as needed to maintain a certain level. After the procedure, the patient can remain on LMWH.

Dosing LMWH for patients with a BMI > 30 kg/m² is often a point of concern for pharmacists. To address this the guideline states:

In patients with class III obesity (BMI > 30 kg/m²) and acute PE who are receiving LMWH therapy, reducing the dose of LMWH *may be* reasonable to reduce the risk of bleeding.”

The evidence supporting this statement was moderate in quality.^{7,8} Pharmacists will need to use clinical judgment when making dosing recommendations for this subgroup. For patients at higher risk of bleeding — recent

gastrointestinal bleeding, recent surgery, thrombocytopenia — clinicians may consider enoxaparin 0.8 mg/kg subcutaneously every 12 hours. For patients at higher risk of clot recurrence, including those with certain cancers or limited mobility, a dose of 1 mg/kg subcutaneously every 12 hours may be appropriate. Kidney function should always be considered, and dosing intervals extended to every 24 hours when needed.

Conclusion

For most patients in acute pulmonary embolism clinical categories C-D, LMWH should be used first for parenteral anticoagulation. Even when advanced procedures are available, but the patient has not yet qualified for them, LMWH remains the preferred option. Dosing LMWH in obesity can be challenging, and pharmacists must rely on clinical judgement and institutional guidance. UFH should be reserved for patients in category E requiring mechanical circulatory support, patients with severe renal impairment and other select situations.

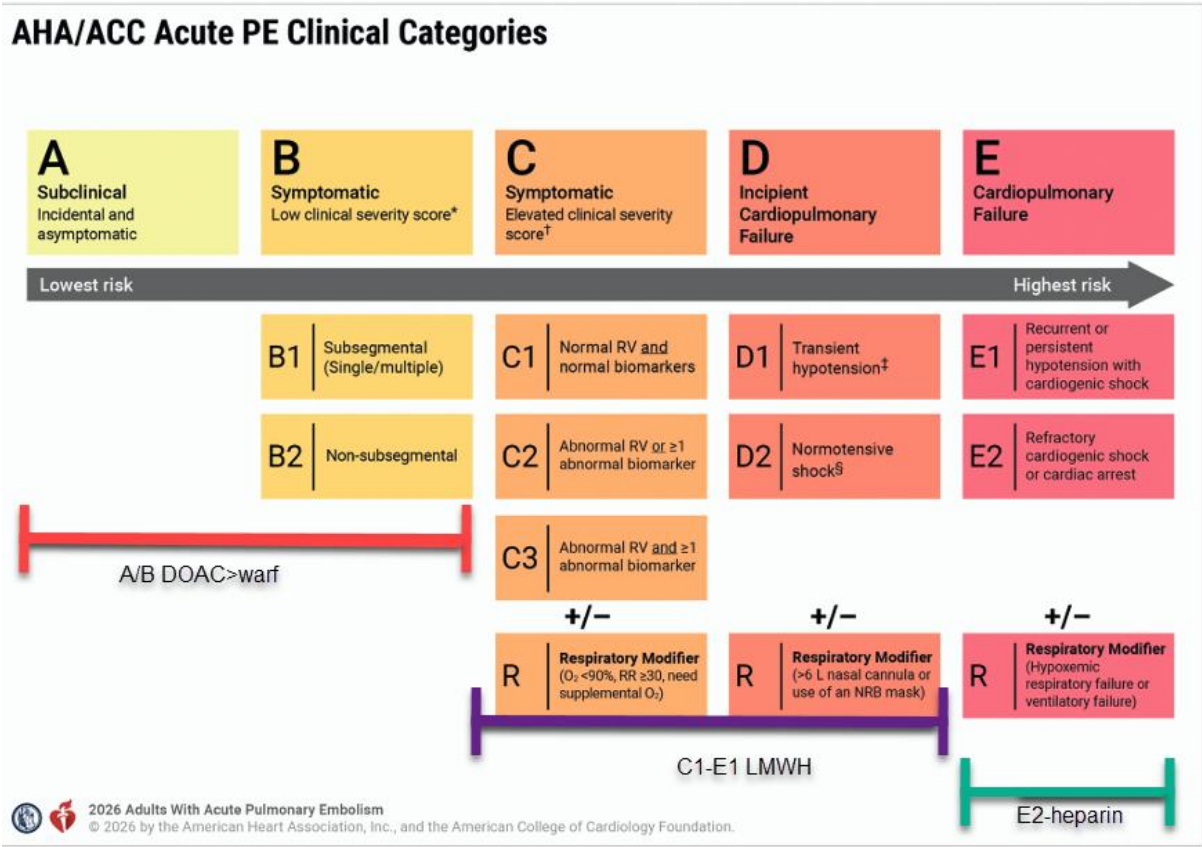


Figure 1

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