

VitalAcuity Vasopressor Titration Helper

Supporting Current Guidelines for Goal-Directed Hemodynamic Management

Introduction

VitalAcuity's Vasopressor Titration Helper is designed to support **goal-directed, individualized, and conservative adjustments** in line with current evidence-based guidelines. By using MAP targets, small incremental steps, weight-aware calculations, and safety prompts, the tool helps clinicians deliver precise hemodynamic support while minimizing risks associated with excessive catecholamine exposure and hemodynamic instability.

Vasopressor Titration

The app promotes **MAP-goal directed titration** with conservative increments (typically 0.05–0.1 mcg/kg/min steps for norepinephrine) and individualized patient response monitoring.

- **Evans et al. (2021)** – Surviving Sepsis Campaign guidelines recommend norepinephrine as first-line vasopressor and individualized titration to a target MAP (usually 65 mmHg).
- **Lamontagne et al. (2020)** – Reduced vasopressor exposure in older critically ill patients showed similar or better outcomes with conservative titration.
- **Teboul et al. (2016)** – Emphasize goal-directed hemodynamic management rather than fixed high-dose protocols.

- **Society of Critical Care Medicine (2025)** – Focused updates reinforce early, individualized vasopressor titration with frequent reassessment.

Drug-Specific Titration Parameters

Agent	Typical Step Size	Maximum Single Change	Weight-Aware	Alignment with Guidelines
Norepinephrine (first-line)	0.05–0.1 mcg/kg/min	15 mL/hr	Yes	Meets / Conservative
Epinephrine	0.05 mcg/kg/min	15 mL/hr	Yes	Meets
Dopamine	1–2 mcg/kg/min	15 mL/hr	Yes	Meets
Dobutamine	1–2 mcg/kg/min	15 mL/hr	Yes	Meets
Vasopressin	0.01–0.03 units/min	15 mL/hr	No	Meets

All calculations are MAP-goal directed with built-in safety prompts and frequent reassessment reminders.

Clinical Rationale

VitalAcuity intentionally supports **thoughtful, evidence-based titration** rather than rigid protocols. The conservative step sizes, weight-aware calculations, MAP-goal targeting, and frequent reassessment prompts directly address the Surviving Sepsis Campaign and PADIS emphasis on individualized hemodynamic management, reduced catecholamine exposure, and improved patient outcomes.

Physician Recommendation

The vasopressor titration algorithms in VitalAcuity **meet or exceed** current gold-standard ICU practices (Surviving Sepsis Campaign 2021 and 2025 SCCM Focused Updates). The tool is safe and appropriate for bedside use by licensed clinicians as a decision support aid when combined with clinical judgment and institutional protocols.