20 Breathing Life into Critical Decisions: A Case-Based Approach to Ventilator Education for Emergency Medicine Residents

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Background: Mechanical ventilation is a critical yet complex skill in emergency medicine, and traditional didactics may not adequately prepare trainees for real-time ventilator decision-making. Case-based and hands-on approaches have shown promise, but their impact in EM residency education remains underexplored.

Objective: We aimed to evaluate whether an immersive, case-based ventilator curriculum would improve trainee knowledge and confidence in ventilator management. We hypothesized that participants would demonstrate significant improvement in both domains after the intervention.

Methods: We conducted a prospective educational intervention at an urban, academic Level I trauma center involving 49 EM residents and medical students, 8 if which completed both pre- and post-assessments. Participants engaged in a faculty-led ventilator workshop in which they rotated through five 30-minute stations, each centered on a dynamic case illustrating a key pathology—including asthma, COPD, CHF, and ARDS—and practiced ventilator management using real equipment. The workshop was facilitated by emergency medicine and critical care faculty, senior residents, and respiratory therapists. Learners were provided primer materials, including a video lecture and slides, prior to the session. Outcome measures included a 14-item knowledge assessment covering airway protection and disease-specific ventilator strategies, as well as a confidence survey. Pre- and post-training scores were compared using descriptive statistics and hypothesis testing.

Results: Asthma knowledge pre- to post-curriculum improved 35.5% from 61.5% to 97% respectively. CHF improved 33% from 50% to 83% respectively. ARDS knowledge improved 28.5% from 65% to 36.5% respectively. Airway protection knowledge improved 27% from 58% to 85% and COPD improved 16.8% from 46.2% to 63%. Confidence in their skills managing patients with these conditions significantly improved from 38% to 54% (p=0.022).

Conclusion: A hands-on, case-based ventilator curriculum significantly improved both knowledge and confidence in mechanical ventilation among EM trainees. This model represents an effective alternative to traditional lectures, though future studies should evaluate long-term retention and broader generalizability.

21 Results of a National Program Director Survey: The Current State of Rotations and Experiences

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Background: The Residency Review Committee (RRC) for Emergency Medicine has proposed several changes to the program requirements for EM residency programs. Among the new requirements are ten required rotations and nine structured experiences. The need for programs to add or modify experiences and rotations has not been previously explored.

Objectives: We hypothesize that there is a variable level of preparedness for the new RRC rules.

Methods: We conducted a national survey of program directors or their representatives through the CORD list-serv over three weeks in April 2025, regarding their current preparedness for the proposed changes. They were asked to indicate if they already had the rotation/experience and would not need to modify it, would need to modify it, or did not currently have the requirement.

Results: A total of 86 program directors or their representatives responded to the survey (29.9% response rate), representing both three-year (83.7%) and four-year

Figure 1—Required Rotations