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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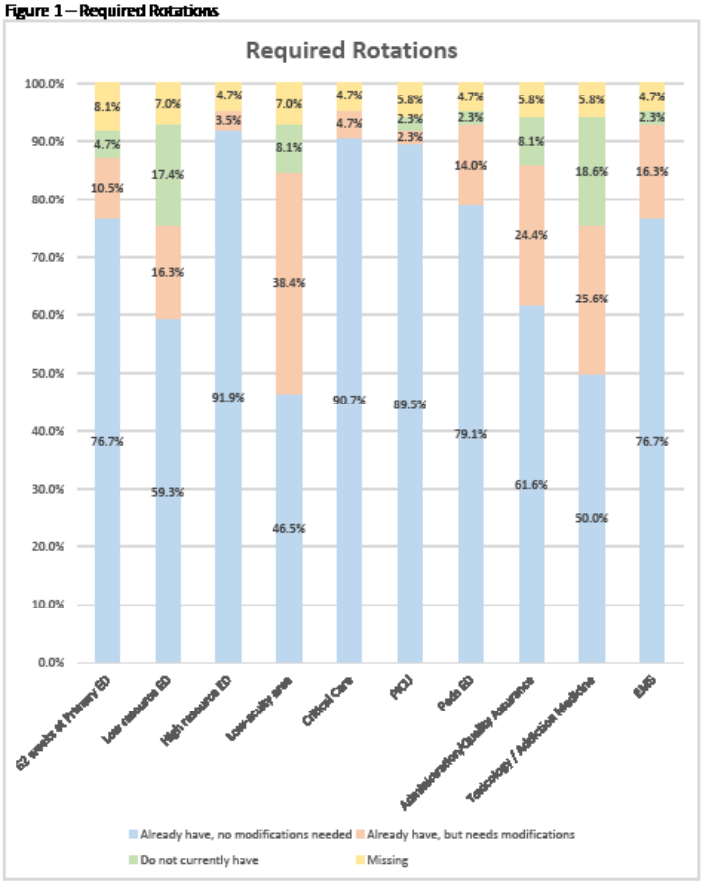
Background: The Residency Review Committee (RRC) for Emergency Medicine has proposed several changes to the program requirements for EM residency programs. Among the new requirements are ten required rotations and nine structured experiences. The need for programs to add or modify experiences and rotations 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



(16.3%) programs. Only 16% of programs reported having all required rotations in place with no modifications needed. Most programs (79%) indicated that at least one rotation needed modifications or was not currently available. The rotations most commonly reported as not currently available were toxicology (18.6%) and a low-resource ED (17.4%) (Figure 1). Only 1 program (1%) reported having all required structured experiences without need for modification. In contrast, 94% of programs indicated that at least one structured experience required modification or was not currently available. The majority of programs currently do not have telemedicine (76.7%) or observation medicine (52.3%) experiences (Figure 2).

Conclusion: Our study suggests that a few rotations and experiences may be a high-yield area for collaboration and development to help the greatest number of programs become compliant with the proposed RRC rules.

22 Affordability of Childbearing During Emergency Medicine Residency: A Cost-Of-Living Analysis

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Background: Many EM residents complete training during prime childbearing years, making postponing family planning difficult. High living and childcare costs may create substantial financial barriers for residents starting a family.

Objectives: To evaluate the affordability of having a child during EM residency by comparing PGY-1 salaries with required annual income (RAI) across household structures.

Methods: Publicly available 2025 PGY-1 salaries were collected for 271 EM programs. Cost-of-living (COL) indices were obtained from the Council for Community and Economic Research (C2ER) 2025 Quarter 3 database, covering 272 U.S. urban areas, and applied when the program's city was included. RAI, the minimum income required to meet basic living expenses in the program's county, was subtracted from salary to calculate annual income surplus for three household structures: single adult, single adult with one child, and two working adults with one child.

Results: The mean PGY-1 stipend was $69,095 (SD = $7,952; range $56,707–$101,200). Surplus for a single adult without children averaged $19,762 (SD = $6,745; range −$2,059–$44,315). For a single-income household with one child, the mean surplus was −$17,466 (SD = $10,724; range −$66,291–$5,729); only 5 of 271 programs provided a positive surplus. Dual-income households with one child had a mean surplus of −$27,601 (SD = $10,616; range −$74,888–−$5,679). Over 95% of programs did not meet RAI for a single parent supporting a child. COL was negatively correlated with surplus for single adults with one child ($r = -.379$, $p < .001$), highlighting greater financial strain in higher-cost areas.

Conclusions: Most EM PGY-1 salaries are insufficient to support a child, even with dual incomes, particularly in high-COL regions. These findings highlight the financial challenges of childbearing during residency and support the need for program-level interventions, including childcare assistance and regionally adjusted compensation, to promote resident well-being and financial stability.

23 Analysis of Emergency Medicine Residents Accepted Through the SOAP Who Required Remediation During Residency

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Background: Recent trends in EM show more unfilled residency positions and greater participation in the Supplemental Offer and Acceptance Program (SOAP). This has led to an increase in applicants entering EM through nontraditional pathways, including those who may be less prepared for residency challenges. Limited data exist on remediation outcomes among EM SOAP residents.

Objectives: Evaluate remediation rates and outcomes of EM SOAP residents and identify common characteristics associated with remediation.

Methods: A national, anonymous, retrospective survey was distributed to EM residency program directors whose programs participated in the SOAP from 2021 to 2024. Respondents reported the number of SOAP residents in their program during this period, how many required remediation, remediation type, candidate characteristics, core competencies remediated, and outcomes. Programs with erroneous or missing resident counts were excluded. Descriptive analyses were performed using chi-square and Fisher's exact tests.

Results: Seventy-five programs reported 399 SOAP residents; 20.8% (n=83) required remediation. Of these, 53% underwent informal remediation, 36.1% formal remediation, 9.6% probation, 10.8% termination, and 8.4% resigned. The remediation success rate was 53.8%. Commonly remediated core competencies included Medical Knowledge (67%), Professionalism (34%), and Patient Care (31%). Characteristics associated with remediation included: pursuing another specialty that cycle (48%), limited or no EM experience (40%), international medical graduate (29%), regional ties (27%), board exam failure (23%), and academic issues (22%).

Conclusion: EM SOAP residents required remediation at a rate nearly five times higher than the previously reported average of 4.4%. Conversely, the rate of successful remediation was comparable to previously reported data. Further study is needed to understand contributing factors and develop support strategies for these residents.