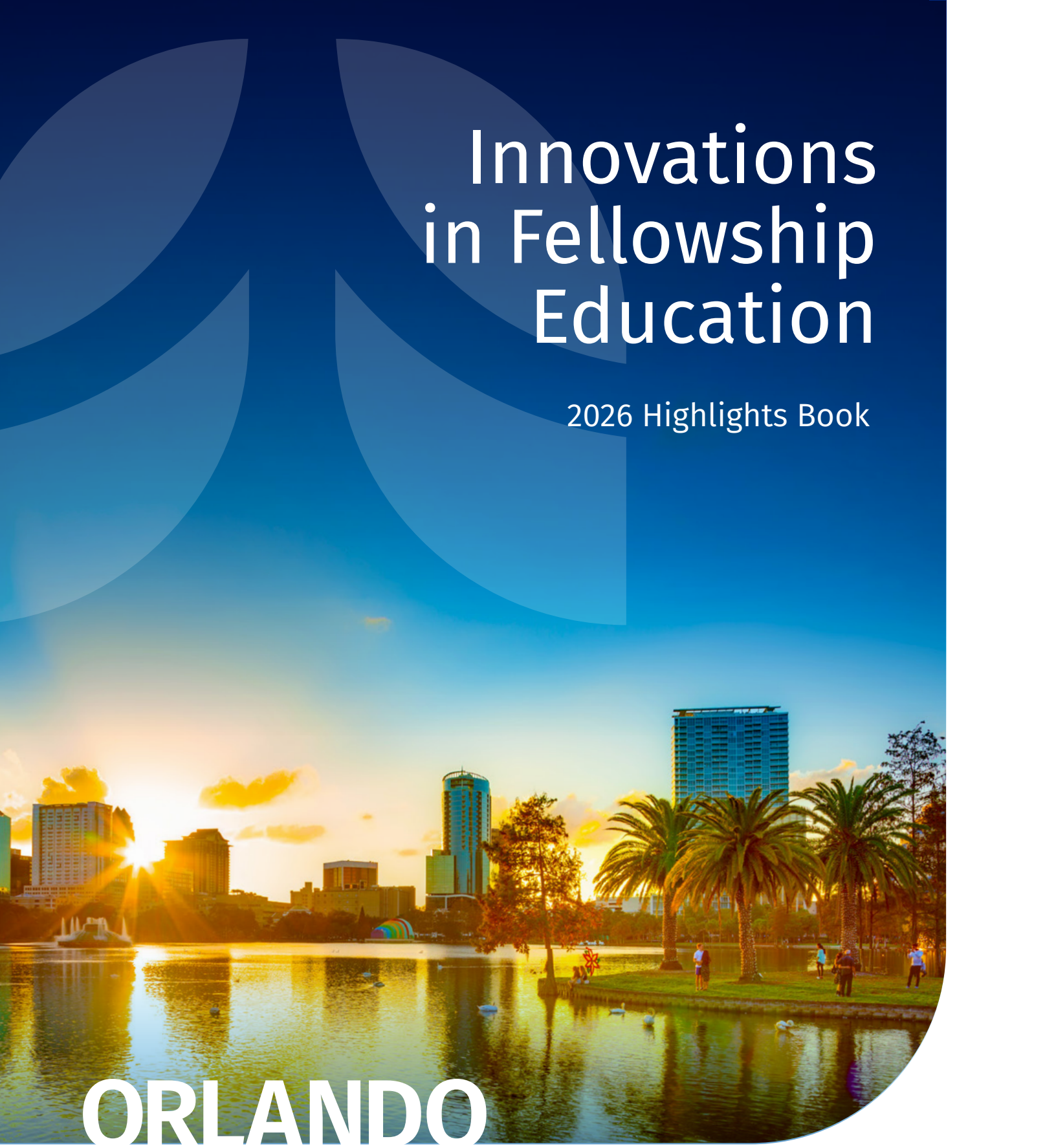


Innovations in Fellowship Education

2026 Highlights Book

A photograph of the Orlando skyline at sunset, featuring a body of water in the foreground, palm trees, and several high-rise buildings. The sun is low on the horizon, creating a warm, golden glow. The word "ORLANDO" is overlaid in large white letters at the bottom left of the image.

ORLANDO

 **ATS** 2026

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PROGRAM DETAILS

The American Thoracic Society (ATS) greatly values a strong fellowship program as a means of academic and clinical success. To recognize programs that implement exceptional practices, the ATS Professional Development Committee programmed the Innovations in Fellowship Education program. All pulmonary, critical care, sleep, and allergy fellowship programs (adult and pediatric) are invited to submit abstracts showcasing a novel and innovative best practice.

Abstracts are reviewed and ranked based on the following criteria:

- Innovation: How unique is the educational program? What is new and different?
- Implementation/Sustainability: How was the program implemented and how effective was such
- Implementation? Is this program sustainable?
- Transferability: How easily might this educational program be adopted by other fellowship programs?
- Outcomes: Are there reported outcomes or plans to measure them?

The goal of this program is to recognize fellowship programs that demonstrate educational excellence and to share these best practices with other programs.

There is a focus on fellowship innovations addressing racial/ethnic disparities or improving diversity, equity, or inclusion. This award focuses on projects related to fellowship education and curricula.

The Ohio State University

Training Pulmonary/Critical Care Fellows to Precept in the Ambulatory Setting

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BACKGROUND:

Pulmonary/Critical Care Medicine (PCCM) fellows have significant opportunities to be educators in the hospital and intensive care unit settings. However, these opportunities are limited in the ambulatory context. In our fellowship, fellows are assigned to a clinic of their own for their first two years and then transition to an assignment in a sub-specialty clinic within the pulmonary division for the last year of training. In these settings, it is rare for a fellow to be able to teach learners in the ambulatory setting. Most PCCM fellows graduate with faculty positions that require ambulatory teaching. Developing these skills is essential in preparation for their future practice.¹ Prior near-peer teaching models at the residency level² have shown improved confidence in outpatient teaching. Another intervention again focusing on ambulatory Internal Medicine education found greater self-assessed teaching and supervision skills among residents who went through a near-peer supervision workshop and clinic session³. However, similar interventions have not been previously developed or studied for subspecialty fellowship training.

OBJECTIVE:

We aimed to develop and implement a near-peer teaching pilot intervention that enhances senior PCCM fellows' ability to teach in the outpatient environment.

METHODOLOGY:

Third-year PCCM fellows (F3s) precepted first-year fellows (F1s) during one half-day clinic session, while being supervised by a PCCM faculty member, in the fall of 2025. F1s saw patients independently, then staffed with both the F3 and the faculty member simultaneously. F3s were encouraged to provide teaching points and feedback on plans to F1s. Faculty supervised the encounters and gave feedback to the F3s on their precepting at the conclusion of the clinic half-day. After the session, F1s, F3s, and faculty were invited to complete an anonymous survey evaluating the educational value and logistics of the intervention. All F3 fellows in our program were required to participate as part of their curriculum, however, their participation in the post-intervention survey was voluntary.

FINDINGS/RESULTS:

Preliminary analysis demonstrated that 75% of fellows had not previously precepted in an ambulatory setting prior to participating in this curriculum. To date, four fellows have completed the experience, with an additional four expected to participate in the coming months as part of this ongoing pilot. 100% of F3s and faculty who participated in the experience completed the survey, in addition to 63% of F1s. Following the intervention, F3s reported high levels of confidence in outpatient teaching roles. On a 10-point Likert scale (0 = strongly disagree, 10 = strongly agree), participants indicated feeling comfortable supervising trainees (mean=7, SD=1.2) and providing feedback (mean=7.7, SD=1.1). F3s reported receiving helpful feedback on their teaching (mean=9, SD=1.2) and F1s noted that it was educational to learn from senior fellows. Importantly, all participants (F1s, F3s, and faculty) reported that the presence of an F3 preceptor did not significantly slow clinic workflow. All participating fellows expressed interest in careers involving ambulatory precepting. Both F3s and faculty agreed that the experience should continue in future academic years.

CONCLUSIONS:

Outpatient precepting requires distinct skills that are not routinely cultivated during PCCM fellowship training, where most teaching experiences occur in the inpatient setting. This pilot curriculum offered an innovative approach to bridge that educational gap by providing structured, experiential opportunities for fellows to practice and refine outpatient teaching skills. Based on positive participant feedback, we plan to expand the number of clinic sessions for each F3 in the next academic year. Beyond enhancing fellows' readiness for future roles as ambulatory preceptors, this curriculum provides a transferable framework that can be adapted across subspecialty training programs to strengthen outpatient teaching competencies and cultivate well-rounded academic clinicians.

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Baystate Medical Center

A Structured Milestones Roadmap to Optimize Competency-Based Learning in Critical Care Fellowship Training

Authors: Mohammad Abu Hishmeh, MD; Carolyn Garcia, MD; Joshua Allgaier, DO; Christopher Allison, MD; Vishali Ramsaroop, MD; Talal Dahhan, M

BACKGROUND

Competency-based medical education (CBME) frameworks are central to ACGME fellowship training, yet implementation often lacks granularity and consistency across training sites. At Baystate Medical Center, we identified variability in fellows' progression toward milestones and gaps in aligning clinical experiences with expected developmental stages. To address this, our Critical Care Medicine (CCM) Fellowship developed and implemented a structured Milestones Roadmap that defines clear, time-linked expectations across five competency domains: (1) History and Physical Examination, (2) Disease Management in Critical Care, (3) Procedural Skills, (4) Evidence-Based Knowledge and Therapeutics, and (5) Professionalism and Leadership.

MULTISTATE METHODS/INNOVATION

The Milestones Roadmap was collaboratively designed by fellowship leadership and faculty using a backward-design approach anchored in ACGME milestones, Entrustable Professional Activities

(EPAs), and institutional feedback from fellows and multidisciplinary teams. The roadmap details progressive goals at 0–3, 3–6, and 6–12 months for Year 1 fellows, and 3–6 and 6–12 months for Year 2 fellows. Implementation included:

- Quarterly milestone review meetings with individualized feedback
- Integration into onboarding and orientation packets
- Tracking of procedural and leadership competencies through direct observation and simulation logs
- Faculty calibration sessions to improve evaluation consistency

RESULTS/OUTCOMES

Within one academic year, 100% of fellows reported improved clarity in performance expectations and progression tracking. Faculty evaluations

CCM Fellowship Milestones Roadmap

Year 1

	0-3 months	3-6 months	6-12 months
History and Physical Exam	☐ Obtain specialty-specific history and physical	☐ Independent formulation of differential diagnoses and management strategies for critically ill patients based on H&P	☐ Independent formulation of differential diagnoses and management strategies for multiple critically ill patients
Disease Management in Critical Care	☐ Provide critical care consultation with supervision ☐ Achieve competency in ventilator management basics	☐ Manage unstable patients and anticipate/act to minimize decompensation ☐ Serve as overnight fellow in ICU ☐ Demonstrate effectiveness in interdisciplinary collaboration and care coordination	☐ Independently manage multiple complex problems in individual patients ☐ Demonstrate foundational knowledge in the initial, continuation, and de-escalation phases of critical illness management
Evidence-Based Knowledge of Disease and Therapeutics	☐ Cite landmark CCM literature for common critical illnesses ☐ Knowledge of CCM guidelines for major illnesses (i.e. ARDS, sepsis)	☐ Demonstrate application of evidence-based knowledge to patient care ☐ Initiate scholarly activity/identify faculty mentor	☐ Draft scholarly activity proposal (i.e. QI initiative, case report) ☐ Present ≥1 article at CCM journal club ☐ Demonstrate continued critical review of CCM literature
Procedural Skill	☐ Achieve competency in independent CVC and arterial line placement ☐ Foundational knowledge of procedural risks/benefits/indications ☐ Achieve competency in general ultrasound-guided assessments/interventions	☐ Supervise resident/intern learners in CVC and arterial line placement	☐ Perform ≥5* pleural procedures (i.e. thoracentesis, chest tube) ☐ Perform ≥5* bronchoscopies on critically ill patients ☐ Demonstrate competency in managing non-difficult airways independently
Professionalism and Leadership	☐ Serve as teacher to resident/intern learners on rounds ☐ Lead rounds for ≥1 day/week ☐ Identify key areas of interest and set personal learning objectives	☐ Lead rounds for ≥2 days/week ☐ Lead goals of care discussions independently	☐ Lead rounds independently most days of the week ☐ Supervise resident/intern learners in patient management

*Numbers serve as guidelines and do not reflect ACGME mandated procedure volume

CCM Fellowship Milestones Roadmap

Year 2

	3-6 months	6-12 months
History and Physical Exam	☐ Develop foundational knowledge in obtaining a detailed history of physical exam for patients in cardiac, surgical, and neurologic intensive care units	☐ Independently elicit detailed history of physical exam on patients with complex or rare disorders
Disease Management in Critical Care	☐ Provide initial critical care consultation and triage consults independently	☐ Develop foundational knowledge in managing unstable patients in cardiac, surgical, and neurology intensive care units ☐ Demonstrate independence in managing all phases of critical illness, including initial stabilization, ongoing care, and de-escalation ☐ Develop foundational knowledge in billing, coding, and administrative responsibilities in preparation for independent practice
Evidence-Based Knowledge of Disease and Therapeutics	☐ Develop and present a 30-minute lecture for intern/resident learners on a core critical-care topic	☐ Present scholarly work at regional or national conference ☐ Serve as a resource for up-to-date, evidence-based management of patients in the MICU
Procedural Skill	☐ Demonstrate foundational knowledge in managing difficult airways	☐ Demonstrate independence in bronchoscopic and pleural procedures for critically ill patients ☐ Demonstrate proficiency in managing airways in critically ill patients, including recognition and management of difficult airways
Professionalism and Leadership	☐ Recognizes and uses appropriate resources for resolving ethical dilemmas (e.g. ethics consultations, literature review, risk/legal consultation)	☐ Role models leadership, accountability, and team-management skills for intern/resident learners and peers

demonstrated greater inter-rater reliability in milestone scoring. Procedural competency attainment improved (median time to independent central line placement reduced from 6 to 3 months). Fellows reported enhanced ownership of learning goals and increased engagement in scholarly activities, with >80% completing a QI or educational project by the end of training. Preliminary program survey data show improved satisfaction with mentorship and self-assessment alignment.

DISCUSSION/IMPACT

The Milestones Roadmap represents an innovative, scalable, and sustainable model for structuring fellowship education. By combining milestone-based progression with individualized feedback

loops, it promotes transparency, accountability, and self-directed learning. Its framework is easily transferable to other critical care or subspecialty fellowships aiming to enhance competency tracking and mentorship alignment. Future directions include electronic integration into a web-based dashboard and correlation with post-graduation practice readiness metrics.

KEYWORDS

Fellowship education, competency-based learning, milestones, critical care, innovation, professional development, DEI, mentorship

Baystate Medical Center

Airway Driver's Test: A Competency Based Assessment of Airway Management Skills in Pulmonary and Critical Care Fellows

Authors: Neil Devoe, DO; Yi Xiang Teo, MD; Christopher Allison, MD; Joshua Allgaier, D; Ernest DiNino, MD

Endotracheal intubation and airway management is a high-risk procedure taught to a variety of physicians, including pulmonary and critical care physicians. There is significant heterogeneity in regard to how endotracheal intubation is taught between fellowship programs in the US. How often pulmonary and critical care fellows are allowed to perform intubations in the medical intensive care unit is also variable (Brady et al). There have been studies to suggest what components would be appropriate for a curriculum (Imayama et al).

The overarching goal of this curriculum was to empower fellows to independently manage airways on a regular basis, and in a safe fashion. We propose the "Airways Driver's Test" as a robust competency assessment allowing fellows to achieve this goal.

In our institution, both CCM and PCCM fellows work together in the ICU. Fellows come to Baystate with much variation in their prior airway experience. Some Emergency Medicine trained CCM fellows have extensive experience in airway management, while other fellows have never performed an endotracheal intubation.

A formalized airway curriculum was needed which satisfied all the following criteria:

- 1) Maintains a culture of patient safety.
- 2) Accounts for prior airway experience, so that advanced trainees (i.e. E.M. trained fellows) are allowed to progress more rapidly.
- 3) Airway anatomy, technical skills, and physiology are incorporated as foundational knowledge into the program
- 4) Actual intubations are video recorded, anonymized, and reviewed for the purpose of ongoing quality improvement
- 5) A fellow who completes all the above is deemed ready for a simulation based critical skills and knowledge-based assessment, which we call the "Airway Driver's Test"
- 6) Fellows who pass our "Airway Driver's Test" are granted the ability to perform intubations independently.

Airway Drivers' Test (ADT)

Prerequisites for Internal Medicine Pathway

- Completion of 50 Intubations, logged on New Innovation
- Completion of Anesthesia Rotation
 - Suggested goal of 30 intubations during this time
- Completion of Airway Sim Practical
- Completion of Airway Cadaver Practical
- Completion of 10 Airway Checklists signed off by attendings
- Above reviewed and approved by Program Director



Prerequisites for Emergency Medicine Pathway

- Completion of 50 intubations during residency with ability to share procedure log
- Completion of Airway Sim Practical
- Completion of Airway Cadaver Practical
- Completion of 3 Airway Checklists for MICU intubations signed off by 3 different attendings
- Above reviewed and approved by Program Director

Based on the above, our airway competency program starts with core didactic sessions early in the first year of fellowship. This is followed by our Cadaver Airway Class where cadavers are used to review airway anatomy and technical skills, and to introduce ‘muscle memory’ to the fellows. The cadavers are specially prepared to maintain tissue turgor. Each fellow intubates several donors using direct laryngoscopy, video laryngoscopy, and finally bronchoscopy. The fellows then complete airway simulation training in our simulation center and additionally take a skills-based exam using mannequins. All internal medicine trained fellows are also required to complete a 4-week rotation on the anesthesia service where supervised intubations are performed.

Throughout the year all fellows perform supervised intubations in the ICU, with the intubations being video recorded and reviewed for ongoing quality improvement.

When all the above is completed, the fellow may apply to the program leadership to take his/her “Airway Driver’s Test”, which is a simulation-based skills and knowledge test of various intubation scenarios.

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Brady AK, Brown W, Denson JL, Winter G, Niroula A, Santhosh L, Carlos WG. Variation in Intensive Care Unit Intubation Practices in Pulmonary Critical Care Medicine Fellowship. *ATS Sch.* 2020 Dec;1(4):395-405. doi: 10.34197/ats-scholar.2020-0004OC. Epub 2020 Oct 21. PMID: 33728421; PMCID: PMC7959255.

Baystate P/CCM Airway Curriculum

Activity	June 2025	July 2025	Sept 2025	October 2025	Dec 2025-June 2026	May 2026
Current Fellows Needs Assessment Survey						
Access to Recommended Reading						
Intubation 101 & 102 Lectures						
Knowledge Pre-Survey						
Springfield College Cadaver Lab						
Airway Sim Training/Practical						
Airway Drivers' Test						
Anesthesia Rotation						
Knowledge Post-Survey						
Intubation Checklist						
Video Laryngoscopy Review						
Revise Curriculum per feedback						

Blue – 1st year fellows, Green – 2nd/3rd year fellows, Purple – All fellows

Cedars Sinai Medical Center

Implementation of a Comprehensive Difficult Airway Curriculum for Pulmonary Critical Care Fellows

Authors: Bobak Akhavan, MD¹; June Choe, MD²; Angelena Lopez, MD¹

¹ Cedars-Sinai Medical Center

² University of Southern California

BACKGROUND:

We identified a gap in structured education surrounding advanced airway management leading to a reduced level of confidence in managing the difficult airway, in addition to a low level of satisfaction with the current education around the topic.

OBJECTIVE:

This project was created to improve fellow satisfaction around structured education in fellowship training. It also served to improve knowledge, confidence, and experience in management of a difficult airway.

METHODS:

The participants included all seventeen pulmonary critical care fellows during the 2020- 2021 academic year. The curriculum consisted of lectures, videos, and simulation sessions, in addition to real-time supervised intubations. Each fellow was given an online anonymous survey with 9 questions on an ordinal scale along with a 50- question written examination prior to starting the curriculum and repeated after completion.

RESULTS:

There was one-hundred percent completion rate in the pre-curriculum survey and seventy-one percent completion of the post curriculum survey. There was at least a 1- point ordinal scale improvement in each category, with a notable 3-point improvement in satisfaction with education. The examination was completed by all participants prior to the curriculum and seventy-one percent after. When excluding the attrition rate of the PGY-6 fellows that did not complete the exam, the total average score increased from sixty-two percent to eighty percent.

CONCLUSIONS:

This curriculum demonstrates that a structured year-round education program that includes videos, lectures, and simulation supporting real life supervised intubations improves confidence around the topic, knowledge based on examination scores, and fellow satisfaction with training

Detroit Medical Center- Wayne State University

An E-Learning Curriculum on Applied Respiratory Physiology for Pulmonary and Critical Care Fellowship Programs

Authors: Jack Tomen, MD; Divya Venkat, MD; Cassandra Cramer-Bour, MD; Abdulghani Sankari, MD, PhD

ABSTRACT:

Respiratory physiology constitutes essential knowledge for a comprehensive understanding by pulmonary critical care physicians. This knowledge is frequently not imparted through formal instruction but rather acquired through experiential learning during training. Although physiology courses have been developed for medical students (Bintley et al., 2019), there is a notable absence of formal education specifically tailored for advanced trainees. A significant decline in respiratory physiology knowledge occurs between medical schools and fellowships, underscoring the necessity for curricula specifically designed for fellows (Maximous et al., 2024). Pulmonary and critical care medicine (PCCM) fellows' ability to interpret pulmonary function testing (PFT) relies on a robust foundation in respiratory physiology. Currently, there is no cost-free, scalable, and readily applicable respiratory physiology course within a PCCM fellowship program. To address this gap, we developed an e-learning course specifically targeting PCCM fellows.

A needs analysis was conducted among faculty physicians in the PCCM program. The majority of physicians surveyed identified the formal interpretation of PFTs as the primary area requiring enhancement within the program. Specifically, a deficiency in training related to respiratory physiology as it pertains to PFT interpretation has been identified. In response, we developed a curriculum aimed at standardizing training in these areas by utilizing our program as a pilot site to evaluate the curriculum's effectiveness and feasibility. This curriculum is specifically designed for fellows undergoing training in the PCCM. All participants completed a pre-test one day prior to engaging in the curriculum. The test questions were formulated with input from PCCM faculty physicians who reviewed the questions to achieve a target difficulty index of 50-70%. The curriculum comprises five interactive modules, each focusing on a distinct aspect of PFTs and their associated respiratory physiology, including the pathophysiology of various pulmonary diseases. The online teaching and learning platform "Edpuzzle" facilitated the creation of interactive videos with integrated questions pertinent to each module's topic, enabling us to monitor trainee participation. Subsequently, trainees completed a post-test one

Figure 1:

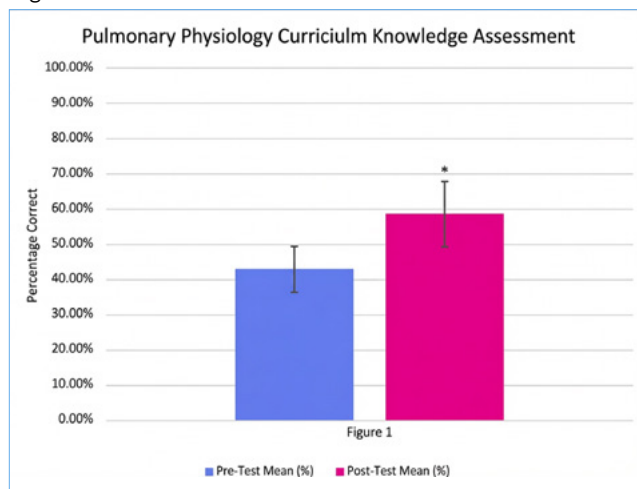


Figure 1: Knowledge performance of PCCM fellows (N=12) is shown as the mean percentage (SD) before and one month after the implementation of a respiratory physiology curriculum using eLearning techniques, *p<0.05.

month after the completion of the modules to evaluate the effectiveness of the instruction and retention of knowledge.

To date, 12 fellows within a single PCCM fellowship program have completed the curriculum. The time required to complete the curriculum is an average of three hours in total, including the pre-test, modules, and post-test. The mean score on the pre-test was 42.95% ± 15.19%. The score on the post-test was 58.66% ± 15.89% (**Figure 1**). This increase in score at the time of post-testing was statistically significant (p= 0.039) as determined using a paired t-test.

The significant increase in test scores highlights the effectiveness of an interactive online respiratory physiology course. This curriculum enhances the knowledge of respiratory physiology, particularly in relation to PFT. It also addresses the gap in medical education by reinforcing core physiological concepts that may be forgotten between medical schools and fellowships. As an e-learning course, the curriculum can be easily scaled to accommodate fellowship programs of any size, eliminating the need for substantial investment in faculty time, money, and equipment. This scalability makes it feasible for implementation in a wide range of programs, including those with limited resources.

Mayo Clinic

Development and Evaluation of a Novel Task-Aligned Central Venous Catheter Simulation Model for Pulmonary and Critical Care Fellowship Training

Authors: Ibrahim A. Gomaa, M.D.; Rosanna Chorro Bas, M.D.; Mariela Rivera, M.D.; Mark E. Morrey, M.D.; Diana Kelm, M.D.

BACKGROUND:

Central venous catheterization (CVC) is a fundamental procedural competency in pulmonary and critical care medicine (PCCM). Commercial task trainers are effective but often expensive which limits the training and practice availability. At our institution, learners identify vessels and perform initial access on the CAE Blue Phantom Gen II Central Line Ultrasound Training Model®. To prevent non-repairable damage to the CAE Blue Phantom, learners must complete the dilation and catheter insertion on a low-cost skin pad. This interruption in the process makes the procedure feel unrealistic for the learners. To address these practical and economic limitations, we developed a novel task-aligned CVC simulation model engineered to replicate all procedural steps, from ultrasound localization through full catheter placement, while maintaining high anatomical fidelity at a substantially lower cost. This study aimed to evaluate the model's educational preference and procedural realism compared with the standard commercial model.

METHODS:

A prospective educational evaluation was conducted during the 2025 central line workshop for PCCM fellows. Participants practiced CVC placement during this workshop with both the standard task trainer and the new model. Teaching faculty were asked to evaluate both models from an instructional standpoint. Data collection used anonymous questionnaires administered electronically after training sessions. The fellow and faculty questionnaire are as seen in **Table 1**.

The new model was designed to allow completion of the entire CVC procedure without interruption, including ultrasound visualization, venous access, wire passage, dilation, and catheter insertion. Realistic materials were selected to replicate soft tissue texture, vascular compressibility, and pulsatile flow. Ballistic gel was chosen for its ultrasound-compatible properties (**Figure 1**). The mold was created by scanning the neck region of an actual human subject to ensure anatomical fidelity. The model was designed for

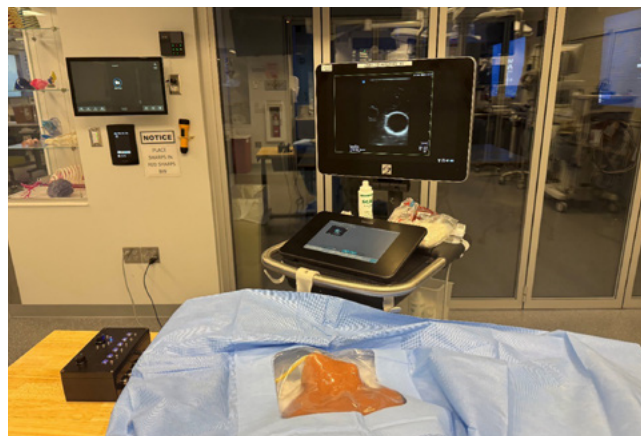


Figure 1: The New Central Venous Catheter Training Model

repeated use, up to 10 procedures, before remolding is required. The total cost for the initial creation of the new model was \$290.

RESULTS:

A total of 15 PCCM fellows and 3 faculty instructors completed the questionnaire, which were completed immediately following the hands-on session. All 15 fellows (100%) preferred the new model for practice. Fourteen (93%) reported that the new model helped them better understand the steps of central line insertion, and 11 (73%) found it easy to identify anatomical landmarks under ultrasound. Representative comments highlighted the model's realistic tactile feedback, ability to perform the entire procedure, and improved ultrasound imaging. A few respondents noted that bony landmarks were less distinct or that the model was slightly small. Despite these limitations, all fellows 15 (100%) endorsed inclusion of the new model in future central line workshops (**Table 1**).

All faculty instructors (100%) preferred the new model for teaching and reported that it allowed them to complete the entire procedure in a realistic fashion. All faculty 3 (100%) stated they could easily adapt their teaching approach, and one faculty member (33%) found it easier to explain anatomical

Table 1: Fellow and Faculty Questionnaire

Fellow Questionnaire		
Question	Response Options	n = 15, (%)
1 Which of the models did you prefer to practice with?	New Model / Standard Model	New Model: 15 (100%) Standard Model: 0 (0%)
2. Did the new model help you better understand central line insertion steps?	Yes / No	Yes: 14 (93%) No: 1 (7%)
3. Was it easy to identify anatomical landmarks on the new model?	Yes / No	Yes: 11 (73%) No: 4 (27%)
4. What did you like about the new model?	Open-ended	“Realistic feel and representative of real placement.” “Able to thread the wire.” “Complete procedure possible.” “Improved ultrasound feedback.”
5. What did you not like about the new model?	Open-ended	“Guidewire harder to advance near the end.” “Anatomical landmarks less distinct.”
6. Should future central line workshops include this new model?	Yes / No	Yes: 15 (100%) No: 0 (0%)
Faculty Questionnaire		
Question	Response Options	n = 3, (%)
1. Which model do you prefer to teach with?	New Model / Standard Model	New Model: 3 (100%) Standard Model: 0 (0%)
2. Were you able to adapt your teaching approach easily with the new simulator?	Yes / No	Yes: 3 (100%) No: 0 (0%)
3. Did the new model make it easier or harder to explain anatomical landmarks?	Easier / Harder	Easier: 1 (33%) Harder: 2 (67%)
4. What did you like about the new model?	Open-ended	“Can perform the whole procedure in one model.” “More realistic blood flow and ultrasound imaging.” “Entire procedure enhances real-life simulation.”
5. What did you not like about the new model?	Open-ended	“Would like integration into a mannequin for orientation.” “Anatomy hard to visualize initially.”
6. Should future central line workshops include this new model?	Yes / No	Yes: 3 (100%) No: 0 (0%)

landmarks, while two (67%) found it slightly harder, primarily due to visual depth and model positioning. Faculty instructors liked the educational value and realism of the new model. Their suggested improvements included better integration into a mannequin for learner orientation and slight adjustments to anatomical depth. All the 3 faculty (100%) would like to use the new model for future workshop teaching (**Table 1**).

CONCLUSIONS:

The novel task-aligned CVC model provides a realistic, reusable, and cost-efficient alternative to commercial simulators, significantly improving perceived realism, procedural completeness, and teaching effectiveness. Preliminary outcomes support its integration into fellowship training curricula and warrant future studies assessing objective skill acquisition and long-term retention.

McGaw Medical Center of Northwestern University

Improving Critical Care Competency in Obstetric Emergencies Through Simulation-Based Training

Authors: Deepa Daryani, MD¹; Veronica Zheng, MD¹; Jessica Zimo, MD¹; Emily Olson, MD²; Amy Ludwig, MD³; Clara Schroedl, MD⁴; Susan Russell, MD⁴

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- ² Mayo Clinic, College and Medicine and Science, Rochester, Division of Pulmonary and Critical Care Medicine
- ³ Endeavor Health Medical Group, Division of Pulmonary and Critical Care Medicine
- ⁴ Northwestern University Feinberg School of Medicine, Division of Pulmonary and Critical Care Medicine

RATIONALE:

Severe maternal morbidity in the United States has increased nearly 200% over recent decades, with a maternal mortality rate of 17.4 per 100,000 deliveries. Despite this, obstetric patients account for only 2.1% of mechanically ventilated ICU cases, leaving many critical care trainees underexposed to these complex scenarios. Simulation-based education offers an opportunity to address this educational gap by providing structured, high-fidelity experiences in a controlled environment. We developed and evaluated a simulation-based curriculum to enhance pulmonary and critical care medicine (PCCM) fellows' knowledge and confidence in managing respiratory failure and cardiac arrest in obstetric patients.

METHODS:

A high-fidelity simulation was designed using a "pregnant" mannequin (SimMom, Laerdal), integrated with real-time vital signs and a mechanical ventilation simulator (ASL5000, Ingar Medical) capable of reproducing respiratory failure with changing respiratory physiology. Participants completed

a baseline confidence assessment across key management domains using a 5-point Likert scale (Figure 1) and a 10-item multiple choice baseline knowledge assessment. Next, participants completed a two-part simulation: (1) acute respiratory failure leading to mechanical ventilation, and (2) clinical decompensation and cardiac arrest. Performance was evaluated with a 36-item learning objective checklist. Structured debriefing and targeted didactic teachings were provided at the scenario mid-point and completion. A 10-item post-test and confidence assessment were then administered, and pre- and post-intervention data were compared using paired t-tests.

RESULTS:

Of 16 PCCM fellows, 4 have completed the curriculum to date. The mean pre-test score was 6.3 ± 0.96 compared to 7.5 ± 1.29 post-intervention ($p = 0.19$). The mean performance score on the learning objectives checklist was 24 ± 5.16 . Learners demonstrated significant gains in self-reported confidence across several domains (**Figure 1**).

CONCLUSIONS:

A targeted simulation-based curriculum improved PCCM fellows' confidence in managing critical obstetric emergencies. Preliminary data demonstrates a non-significant increase in knowledge while a learning objectives checklist demonstrates several gaps in current trainee management. Simulation may provide an effective, reproducible framework to strengthen trainee preparedness for high-acuity, low-frequency events in obstetric critical care. Ongoing work aims to assess skill retention and broaden the curriculum to encompass additional obstetric emergencies, including eclampsia and acute liver failure.

Figure 1:

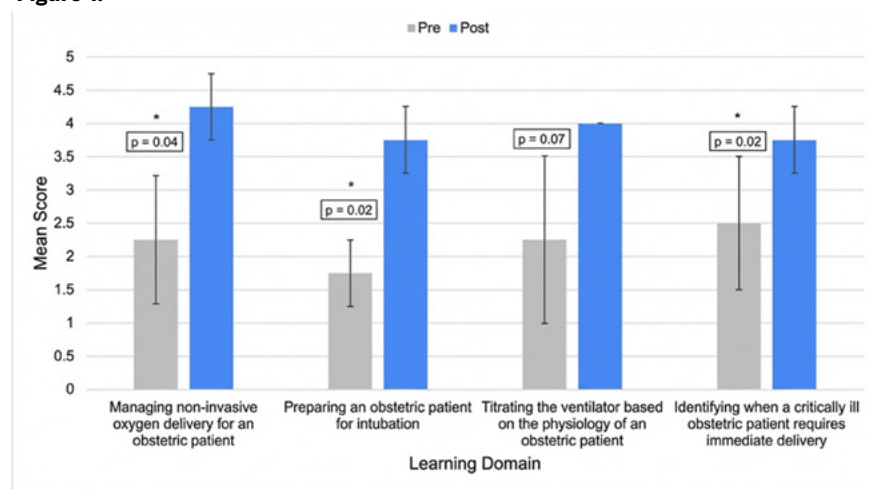


Figure 1: Changes in self-reported confidence before and after participation in the Critical Care Obstetric Simulation Curriculum. Bar plot displays mean pre- and post-simulation Likert scale scores, with 1 indicating "not confident" and 5 indicating "very confident." Asterisks denote statistically significant differences ($p < 0.05$).

Nemours Children's Hospital

PECMO-VR: A Pediatric ECMO Virtual Reality Simulator

Authors: Nicholas Kalbach, MD; Christin Carroll, MD; Michael Golecki, RN; Nicholas Slamon, MD

BACKGROUND:

Extracorporeal Membrane Oxygenation (ECMO) is the bedside advanced technology that is used to support the patient when the heart and/or lungs are failing. ECMO is a high risk- low incidence therapy that presents limitations in terms of education, with large resources required to uphold training and simulation and optimize patient outcomes. Traditional methods of using a mannequin and priming of a live ECMO circuit is costly and time consuming. Virtual reality (VR) simulation offers a novel solution to the alternative of traditional didactic curricula or absence of a formal curriculum, as is the case in many pediatric medical education centers. VR creates immersive, interactive environments that allow for repetitive, self-directed practice, and it has been shown to improve both spatial understanding and technical skill. VR also addresses the many logistical barriers associated with ECMO education, including reducing reliance on live patients and/or faculty supervision. Despite these benefits, there is limited data on the impact of a VR-based ECMO education in pediatric training. Seeing a gap in ECMO experiential learning for the fellows considering the low incidence of the therapy, we sought to utilize VR to bridge the disparity. In this effort, we designed 10 VR scenarios with developers, and built a fully functional

ECMO simulator to mimic all of the anticipated functionality of a working ECMO circuit. We propose a comparison study between ECMO core specialists and providers with less ECMO experience (fellows, nurse practitioners and non ECMO core specialists). All participants will experience VR ECMO simulation scenarios and be asked to identify errors within the scenario that will help them arrive at a patient diagnosis. They will be asked to suggest interventions for the various scenarios to help improve the simulated patient condition. All scenarios will be timed. The primary outcome is assessing ECMO education using VR simulations among different groups that may be exposed to patients requiring ECMO support. The participants are scored based on the errors they have identified within each scenario, the correct interventions they suggested based on the correctly identified case, and the time it takes them to diagnose and suggest interventions for the identified scenario. To date, we have run 32 simulations including fellow participants as well as Core ECMO specialists and other trained personnel. Following the results and publication of our findings, future directions for this work include direct comparison between VR simulation and traditional in-person simulations and evaluations on ability for skill and memory retention.

The Ohio State University

Development of a Clinical Administrative Track for Pulmonary and Critical Care Medicine Fellows

Authors: Meghana Moodabagil, MD; Avraham Cooper, MD; Naeem Ali, MD

BACKGROUND:

Pulmonary and Critical Care Medicine physicians often occupy key roles in hospital administrative leadership. However, few examples of structured curricula and training pathways exist to prepare fellows to become clinician administrators. When fellows self-identify early in their careers as future leaders, they often struggle to find mentorship, scholarly work, and education that prepares them for the variety of roles they may eventually pursue post-graduation. While advanced degrees, such as Master in Business Administration, can offer robust training opportunities, they are time consuming, costly, and not universally available or tailored to Pulmonary and Critical Care Medicine physicians. To bridge this gap in fellowship education at our institution, we implemented a new Clinician Administrator track.

METHODS AND DESIGN:

This pathway was designed with the following goals and aims: prepare fellows to work as clinical administrators and leaders in large healthcare systems, develop an understanding of the breadth of roles within healthcare administration and leadership, foster knowledge, skills, and experience in clinical leadership, quality improvement development and service management, and lastly to cultivate mentorship relationships with leaders and administrators both within and outside The Ohio State University's Division of Pulmonary, Critical Care and Sleep Medicine. The track begins during early second year of fellowship and involves five components: 1) a focused curriculum, 2) mentorship, 3) experiential learning, 4) leadership coaching, and 5) scholarship. The quality improvement and patient safety-focused curriculum includes enrolling in local Lean Six Sigma certification, completing both Yellow and Green Belt certification by the end of fellowship, as well as the option for advanced degrees such as Master of Health Administration, Master of Public Health, or Master of Business Administration. Additionally, fellows participate in leadership development training, meeting management training, and focused

budgeting projects by working with various hospital administrative groups in an apprenticeship-type role. Each fellow is paired with at least one primary mentor who is a clinician administrative leader, sponsoring the fellow in shadowing opportunities and experiential project work. Fellows in the track are paired with one of Ohio State's Learning and Development Specialist Coaches from the Office of Faculty Affairs, to focus on building emotionally intelligent leadership skills.

IMPLEMENTATION AND DISCUSSION:

Through its first academic year of implementation of this track pathway, we have successfully enrolled one fellow (MM) who has achieved multiple points of success thus far, benefiting from the University's robust resources. The fellow has identified one primary mentor but also had the opportunity to meet with many other key administrators and learned the structure of a hospital system and the inner workings of the leadership tree. Opening the door to meeting leaders has allowed for great collaboration and inclusion in multiple key committees. They have also begun actively participating in quality improvement work including rapid improvement events focused on emergency response team expansion and code blue team organization. The fellow completed the first part of the educational curriculum and achieved Yellow Belt Certification in Ohio State's Lean Six Sigma. They have also recognized the value of emotional intelligence leadership coaching and continuing to build their leadership skills based on individual experiences. The next phase will include leading a team through solving a clinical problem, from developing a problem charter through implementing a process change and measuring its impact.

CONCLUSION:

We implemented a dedicated track preparing fellows for careers in clinical leadership and hospital administration, anchored in experiential learning, mentorship, and coaching. This model could be adapted by other fellowship programs to enhance career development pathways for trainees.

University of Colorado

A Simulation Enhanced Curriculum in Pulmonary Vascular Disease

Authors: Peter Hountras, MD; Daniel Gergen, MD; Bryan Park, MD; Alexandra Kerekes, MD; James Lavelle, MD; Anna Neumeier, MD

BACKGROUND:

Clinical and educational experiences during fellowship are limited by both time and clinical expertise. Previously, fellows in our Pulmonary and Critical Care Medicine (PCCM) program completed two months of clinical pulmonary vascular disease (PVD) training. However, beginning in the 2024–2025 academic year, this dedicated clinical experience was reduced to one month due to time constraints, limiting fellows' exposure to this complex subspecialty. In order to maintain a strong education in PVD, we enhanced our curriculum through the integration of didactic and simulation. The goal of this curriculum was to maintain foundational medical knowledge of PVD and improve fellow confidence in the diagnosis and management of patients with PVD.

METHODS:

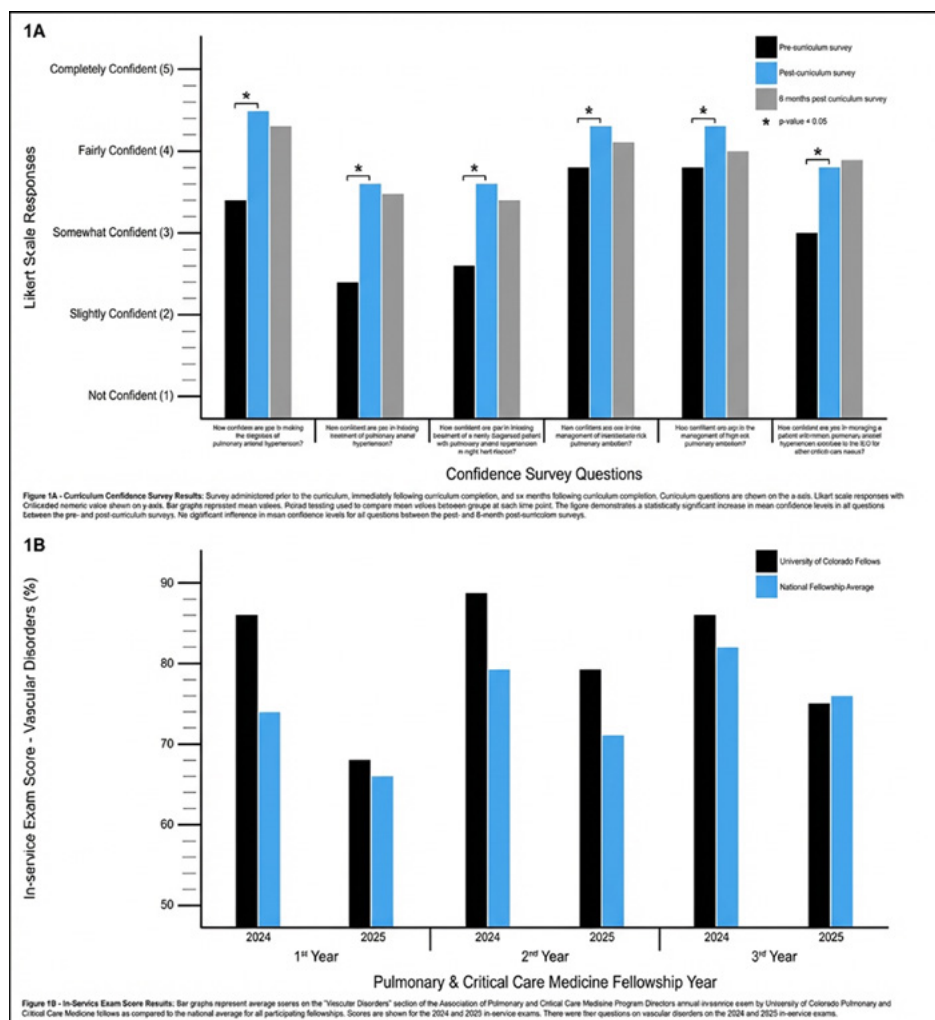
The pulmonary vascular disease curriculum for PCCM fellows was designed to strengthen clinical understanding and application across a spectrum of pulmonary vascular conditions. The curriculum comprised six didactic sessions focused on the management of pulmonary embolism (PE), chronic thromboembolic pulmonary hypertension (CTEPH), management of acute right ventricular (RV) failure, hemodynamic interpretation and right heart

catheterization, pulmonary arterial hypertension (PAH) therapies, and high-altitude pulmonary edema (HAPE). To reinforce application of core concepts, fellows also participated in three simulation-based sessions addressing the management of intermediate-to high-risk PE, acute RV failure, and RV failure in critical illness (**Table 1**). This blended approach provided both foundational knowledge and hands-on experience in the evaluation and management of complex pulmonary vascular disease.

To evaluate the curriculum, fellows were assessed using multiple methods. First, fellows completed surveys before, immediately after, and six months following the curriculum to assess confidence across five key domains using a five-point Likert scale (from Not Confident to Completely Confident Figure 1a). Second, medical knowledge was evaluated through multiple measures: performance on the annual standardized in-service examination, with comparisons of pre- and post-curriculum topic-specific scores and national benchmarks, and a set of six case-based multiple-choice questions administered alongside the confidence surveys (Figure 1b). Finally, fellows completed post-course free-response questions to provide qualitative feedback on the curriculum's usefulness, identify gaps, and recommend optimal delivery intervals for future iterations.

	Didactic Component	Simulation Component
First Session (Month 1)	A) Pulmonary embolism (PE) management B) Chronic thromboembolic pulmonary hypertension	Diagnosis and management of intermediate/high-risk PE
Second Session (Month 2)	A) Management of acute right ventricular (RV) failure B) Hemodynamics of acute RV failure & right heart catheterization interpretation	Diagnosis and management of acute RV failure
Third Session (Month 3)	A) Pulmonary arterial hypertension (PAH) management with a focus on group 1 PAH therapies B) High-altitude pulmonary edema	Management of co-existing RV failure in critical illness

Table - Curriculum Content Distribution: Curriculum delivered over a three-month period in 2025 to first, second, and third-year University of Colorado Pulmonary and Critical Care Medicine fellows. Each session in the curriculum was composed of thematically similar didactic and simulation components to ensure intentional repetition and spaced learning. Specific topics in each session recurred in later sessions to ensure interleaving of high-yield curricular content. During the session fellows were separated into groups of 5-6 based on their year in fellowship.



RESULTS:

Fellows were surveyed with a five point likert scale on their confidence level in five different areas both prior to, immediately after, and 6 months after completion of the curriculum. Fellows improved their confidence on all 5 questions surveyed from prior to immediately after the completion of the curriculum. This confidence was maintained when the fellows were surveyed again 6 months after completing the curriculum.

Medical knowledge on pulmonary vascular disease was assessed in two ways. First, our PCCM fellows in-service scores on the topic of PVD prior to the change in fellowship structure were above the national average for all years of fellowship. After the decrease in clinical rotation but implementation of the new curriculum, our fellows maintained the above national average scoring on PVD. Second, on the six case-based questions the PCCM fellows improved the percentage of fellows scoring correctly in 4/6 questions. Despite the reduced clinical time, fellows'

in-training exam scores in pulmonary vascular disease remained above the national average, showing no change after curriculum implementation.

In free-response feedback, most fellows (13/17) reported that simulation enhanced their learning and recommended repeating the PVD curriculum annually or biennially.

DISCUSSION:

A curriculum combining didactics and simulation effectively sustained PCCM fellows' knowledge and confidence in pulmonary vascular disease despite reduced clinical exposure. Fellows maintained exam performance, improved on case-based assessments, and reported durable confidence gains, with simulation enabling hands-on practice in complex scenarios. These results suggest that blended curricula can compensate for limited clinical time, supporting broader adoption in fellowship programs facing similar constraints.

University of Colorado

Development and Validation of the Denver Critical Illness Intubation Entrustment (D-CITE) Tool

Authors: James Wykowski, MD; Courtney Donovan, PhD; Tristan Huie, MD; Melissa New, MD

PURPOSE

Intensive Care Unit (ICU) intubations are high-risk procedures. Training in ICU intubations varies, and there are no validated tools to assess intubation skills in the adult ICU setting. Existing tools commonly rely on checklist approaches of assessment. We sought to develop and validate a novel ICU intubation entrustment tool using an entrustment scale.

METHODS

We conducted a modified Delphi study including intubation education experts in Anesthesia, Emergency Medicine, and Pulmonary/Critical Care Medicine. Experts taught at national airway management courses, led local airway curricula for trainees, and/or had prior publications focused on airway management. We sought feedback on three components of the tool: intubation characteristics

used to sub-categorize ratings (e.g., anatomically difficult airway), intubation scenario micro-skills, and other markers of intubation success (e.g., first pass success).

Following development of the tool, we conducted two simulation sessions to gather further validity evidence. Three groups of participants: beginners (0-5 prior intubations), intermediate (5-25 prior intubations), and advanced (>100 prior intubations) completed three airway management scenarios. Participants completed simulations using an airway mannequin and had the opportunity to select from a variety of equipment. Simulations were assessed by at least two faculty. Following the simulation, faculty completed a survey and interview about their experience. We calculated Cronbach's alpha and intraclass correlation to examine reliability, and we conducted exploratory factor analysis and

Table 1: Validity Evidence Gathered According to Messick's Validity Framework

Domain	Source of Evidence	Description of Findings
Content Validity	Literature Review	Robust literature of intubation education literature demonstrated a lack of validated tools for adult ICU airways
	Delphi Process	Evaluation tool content generated by diverse group of experts
	Item Analysis	Variation in scores with all items contributing to total score
	Exploratory Factor Analysis	Factor analysis demonstrates a single construct of airway ability represented by all items
Response Process	Rater Survey Results	Raters report instructions sufficient and being to understand tool well
	Rater Interviews	Sources of confusion identified during interviews will be clarified in future rater instructions
	Interrater Reliability	High interrater reliability for all items
Internal Structure	Reliability	Cronbach's Alpha and Interclass Correlation Greater than 0.7
	Rasch Modeling	Rasch Modeling demonstrated ideal person and item separation
	Exploratory Factor Analysis	Exploratory Factor Analysis shows a single factor
Relationship to Other Variables	Association of Micro-skills with Global Assessment	Scores on each micro-skill are strongly associated with global assessment
	Association of Global Assessment Score with Grade of View Obtained	Obtaining a Grade 2a view rather than Grade 1 was associated with a lower score on the view micro-skill and the global assessment
Consequences	Correlation of Scores with Level of Training	Increasing scores across the training supports the use of tool for formative feedback

Figure 1:

Figure 1. D-CITE Tool

The Denver Critical Illness Intubation Entrustment Tool

Demographics

Fellow: _____ Rater: _____
 Site: _____ Date: _____

Evaluation Areas

Intubation Micro-Skill Rating Scale

Based on this fellow's performance, how would you supervise them for a future, similar airway?

- | | |
|---|---|
| 1 – I need to perform the procedure myself. | 4 – I need to be present only in case help is required. |
| 2 – I need to be present and guide step by step. | 5 – I do not need to be there |
| 3 – I need to be present and prompt occasionally. | n/a – I am unable to assess |

Intubation Micro-skill	Rating					
Assessing for potential airway anatomic difficulty (mouth opening, neck mobility, use of a structured assessment tool)	1	2	3	4	5	n/a
Setting up room equipment and supplies (IV access, suction, monitoring, patient positioning)	1	2	3	4	5	n/a
Selecting appropriate intubation equipment, including back-up materials	1	2	3	4	5	n/a
Selecting appropriate medications and dosing for induction	1	2	3	4	5	n/a
Performing pre-intubation preoxygenation and hemodynamic management	1	2	3	4	5	n/a
Verbalizing back up plan	1	2	3	4	5	n/a
Obtaining a view of the glottic opening (vocal cords)	1	2	3	4	5	n/a
Passing the endotracheal tube into the trachea	1	2	3	4	5	n/a
Confirming endotracheal tube placement	1	2	3	4	5	n/a
Communicating effectively with team members	1	2	3	4	5	n/a
Global Entrustment Assessment: Overall, how would you supervise this fellow for a future, similar airway?	1	2	3	4	5	n/a

Airway Characteristics

These questions help classify the difficulty and success of this intubation attempt

Airway Characteristics	Rating
Anatomically Difficult (Soiled or bloody, oropharyngeal mass, etc.)	Yes / No
Physiologically Difficult (hypotension, significant hypoxemic, etc.)	Yes / No
Hx of difficult airway documented in EMR	Yes / No
How many intubation attempts were needed by the fellow?	1 2 3 ≥4 Unsuccessful
Cormack-Lehane Airway View Grade*	1 2a 2b 3a 4
Peri-Intubation Cardiac Arrest?	Yes / No
Other Complications (Specify):	

*Cormack-Lehane Airway View Grade: 1 (full view of cords) 2a (partial view of cords)

2b (arytenoids or posterior cords) 3 (only epiglottis) 4 (no structure visible)

Rasch modeling to further assess internal structure validity. Rasch modeling is a tool to analyze how well components of an evaluation describe participants' ability. Model fit is assessed using Infit and Outfit Mean Squares, with acceptable values being between .5-1.5.

RESULTS

The modified Delphi study included nineteen experts representing seventeen institutions and consisted of two rounds. Greater than 90% of experts participated in each round. The process resulted in the Denver Critical Illness Intubation Entrustment (D-CITE) Tool (**Figure 1**).

Twenty-nine participants completed the simulation. Validity evidence to support the use of the D-CITE tool in a simulated environment is summarized in Table 1. Scores on each intubation micro-skill and the global assessment all had statistically significant differences when compared by level of training. Within each level of training, there were no statistically significant differences in scores across the three scenarios.

The D-CITE tool demonstrated high reliability with Cronbach's alpha of 0.97 and intraclass correlation of 0.77. Exploratory factor analysis demonstrated a single factor of intubation competence, with an eigenvalue of 8.25 explaining 82.5% of variance in

scores. The overall model fit was appropriate (Infit MNSQ = 0.99, SD = 0.05; Outfit MNSQ = 0.96, SD = 0.06). All items and persons fit the model except for "Assessment of Potential Anatomic Difficulty," which had elevated Mean Infit and Outfit MNSQ (2.21 and 2.07, respectively). This lack of fit for this element may result from the format of the simulated environment in which the learner's assessment of anatomic difficulty, if unspoken, may have been inferred incorrectly by the observer

Ten faculty from four sites participated as raters, six of whom completed the follow-up survey. All faculty strongly agreed or agreed that 1) they understood what the tool was asking, 2) the tool would help them give formative feedback to trainees, 3) they were able to easily complete the tool on their phones, and 4) they would have time to complete the tool in the clinical environment.

CONCLUSION

We created a novel adult ICU intubation entrustment tool, the D-CITE, that assesses the necessary steps for intubation across the spectrum of competency. Application of the tool for assessment and feedback demonstrated strong validity evidence for use in a simulated environment. Future studies will evaluate the tool's validity for use with intubations in the clinical setting.

University of Maryland School of Medicine (NIH Clinical Center)

Fellow Educators: GME to UME Education Track

Authors: William Grier, MD; Devang Patel, MD; Nirav Shah, MD; Roxana Amirahmadi, MD; Van Holden, MD

ABSTRACT PRESENTATION:

Identifying a need to define educational goals and standardize Clinical Educator track in our fellowship, we sought to form a strong and lasting partnership between our school of medicine (UMSOM) and Pulmonary and Critical Care Fellowship, hereby defined as Undergraduate Medical Education (UME) and Graduate Medical Education (GME), respectively. At our institution, fellows are employed by the hospital, with the accredited fellowship distinct from the school of medicine. In this novel track, fellow educators are given the opportunity to formally participate in UME, serving as fellow leads for the 4- week Pulmonary Course small group sessions and didactics in the UMSOM Year II curriculum. Fellows work closely with lead faculty members and course director. Participation in this track creates a coaching relationship between faculty and fellow educators that defines track objectives, facilitates direct observation, and offers targeted feedback to foster their growth as skilled educators. There are well defined educational tracks in other PCCM programs, however here we present a novel pathway in which fellows are fully embedded in and recognized by UME.

INTRODUCTION:

Fellows frequently articulate educational aspirations for both their fellowship training period and in their subsequent careers. We have worked to define, standardize, implement, and expand a rigorous Clinical Educator Track in our program. This track allows fellow educators to participate in formal medical student education, focusing on the pre-clerkship years, becoming fully integrated with the UME environment at the UMSOM.

DISCUSSION:

The GME to UME track started in 2023 as a pilot program, consisting of the faculty lead employed by the SOM, paired with a selected fellow with a strong desire to continue their career in medical education. This program between the GME and UME teams, allowed for formal recognition from the PCCM fellowship and UMSOM. To ensure success, the fellow

educator was allowed protected time from GME to formally participate in the UME course. The success of the pilot program led to expansion of the track to include two educational fellows per year.

Fellow educational responsibilities chiefly focus on serving as lead educator in small group sessions, facilitating group discussion through case-based learning. Additional expectations include attendance at course logistics planning meetings, exam creation, and leading the end of course review session. In addition to the 4 weeks of daily educational commitments during the Pulmonary Course, the fellows return to the UME classroom in the winter and spring, functioning as pulmonary experts for our UME Multisystems Course, and our Transition to Residency Course. Fellows are required to join our Medical Education Leadership Academy, a longitudinal commitment consisting of Fall and Spring Educational Conferences and monthly ground rounds. Completing the participation in the UME education track, fellows enroll in and complete the AAMC MERC program.

CONCLUSIONS:

We have proven over the last three years that a defined educational track, with equal buy-in from GME and UME offers unique opportunities for fellow educators. Participation in this track may impact future career choices, contribute to educational portfolio building, and offers formal recognition of track completion at time of fellow graduation. This recognition in the form of a certificate of completion legitimizes fellows' time commitment, educational exposure, and helps strengthen their curriculum vitae. There has been tremendous appreciation from the medical students, praising the work of the fellow educators and the benefit of having near-peer educators. This informal recognition has been noted by UMSOM and has allowed for the continuation of this educational track. Future plans of this novel educational pathway include increasing the scope of the program to provide fellows educational opportunities involving clerkship students, interns, and residents and expansion to other fellowship programs.

University of Wisconsin, School of Medicine and Public Health Does a Multisite Discussion Group Impact Allergy and Immunology Fellows' Perception of their Culturally Centered Care Practices?

Authors: Jami Simpson, MS, ACC; Sameer Mathur, MD, PhD; Jessica Perkins, MD; Tara F Carr, MD; Sarita Field, Social Impact and Belonging

RATIONALE:

Ethnic minorities make up 30% of the US population and are projected to become the majority by 2050 (1). As populations become more culturally diverse, healthcare providers must be equipped to deliver care that is culturally-centered and responsive to all backgrounds. Without intentional education, training programs risk graduating physicians who are unprepared to meet the needs of this evolving demographic landscape. (2). Allergy and Immunology (AI) practitioners managing diseases including asthma, eczema, food allergies and immunodeficiencies, must consider that incidence and severity are influenced by race, ethnicity, socioeconomic status, and other social determinants of health. The Accreditation Council for Graduate Medical Education (ACGME) requires programs to train learners to demonstrate cultural humility while assessing social determinants of health; however, individual programs may be limited in providing opportunities for direct exposure to patient communities with diverse or distinct health-related needs. This curriculum addresses that gap by focusing on building learners' capacity for culturally-centered care through self-awareness and skill development.

METHOD

The following universities are participating in a multi-site culturally-centered care curriculum, designed to provide wider exposure to healthcare disparities: University of Mississippi Medical Center, University of Arizona College of Medicine, University of Wisconsin's School of Medicine and Public Health (SMPH). The AI Fellowship Program Directors (PD) from these institutions protected 60 minutes on three Fridays (November 2025 - January 2026) from 1:00-2:00 CTZ. The content was created by SMPH's office of Social Belonging and Impact, and facilitated by a representative from their staff. Topics discussed include: (Nov) Unconscious Assumptions, (Dec) Healthcare Outcome Differences, (Jan) Culturally Centered Practice. The formatting of the hour-long session is discussion based, following short 5-8 minute prompts. Primary audience members include the program's fellows, along with the PD and Associate Program Directors. To measure the curriculum's impact, first, consented participants will complete Foronda et al's validated Cultural Competency Assessment Tool (3). This will be used as a pre-

and-post assessment, to see if participant's scores changed because of the curriculum. Next, they will complete an evaluation of the curriculum. This was created in partnership with SMPH's Survey Center. Finally, learner's self-reflection journal entries will be assessed for trends in what the participants are changing in their clinical care practices. This has been deemed IRB exempted by SMPH.

RESULTS:

Based on a cross-cultural focus group, conducted by a palliative care program, which reported their discussion-based format resulted in clinicians reporting greater acquisition of cultural awareness, we believe our data will show improved perception of trainees' practice of culturally-centered care (4). Chu W's team demonstrated that training features that include reflective activities, case discussion and interactive methods are commonly associated with improvements

in attitudes, knowledge and skills. (5) We also point to GW Allport's Intergroup Contact Theory, which purposes that positive and meaningful interactions between people from different groups can broaden participant's cultural lens, when the participants are of equal status, cooperate towards a common goal, and have institutional support. Our sessions are structured to embody these qualities, and we believe this will also yield favorable outcomes. (6)

Conclusion:

This multi-site curriculum is designed to build learners' capacity to deliver culturally-centered care to patients from all backgrounds. Rather than simply exposing trainees to geographically diverse populations, the curriculum fosters self-awareness, reflective practice, and skill development. The discussion-based curriculum, led by a content expert, we believe will move our participants beyond objectives like "identify," to more complex abilities such as "integration," which is critical for Allergy and Immunology physicians whose patients' disease severity vary greatly depending on a patient's ethnic and socioeconomic status. Finally, we believe this style of learning about health care disparities personalizes the content, which more completely satisfies the ACGME's requirement.

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