

# BEYOND THE BLUE: What Fellows Are Reading in Other Journals

## Education Considerations: Communication Curricula, Simulated Resuscitation, and Duty Hour Restrictions

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*Recommended Reading from Mayo Clinic Pulmonary and Critical Care Medicine Fellows; Kannan Ramar, M.D., Program Director*

### McCallister JW, et al. Communication Skills Training Curriculum for Pulmonary and Critical Care Fellows. *Ann Am Thorac Soc* (1)

Reviewed by Erin S. DeMartino

In routine practice, an intensivist must convey intricate and often devastating information to patients and surrogates, guiding them through complex decisions with life-and-death implications. Although the Accreditation Council for Graduate Medical Education (ACGME) and the American Thoracic Society have called for pulmonary and critical care medicine (PCCM) trainees to receive formal communication skills training, few curricula have been developed, implemented, and published.

Focusing on the family meeting as a prototypical intensive care unit (ICU) encounter, McCallister and colleagues (1) developed a year-long communication skills educational program. Beginning with a 3-hour didactic workshop incorporating role plays, the program was interwoven into the first year of PCCM fellowship. The authors created a checklist-based assessment derived from available literature on ICU communication, the Family Meeting Behavioral Skills Checklist, to facilitate feedback and monitor evolution of fellows' skills. This tool was used for self-evaluation, to provide structured feedback from palliative medicine faculty observing fellows conducting family meetings, and by two blinded psychologists who scored digital recordings of simulated family meetings performed before and after the intervention. In a pre-post analysis, trainees demonstrated a significant increase in total observed Family Meeting Behavioral Skills Checklist skills from 51 to 65% ( $P < 0.01$ ; Cohen's D effect size, 1.13) and improved self-confidence (from 77 to 89%,  $P < 0.01$ ; effect size, 0.87).

In the same issue of *AnnalsATS*, Hope and colleagues (2) describe a communication skills program implemented in their medical ICU. This 1-month curriculum incorporated didactic sessions focused on palliative care, ethics, and end-of-life care, as well as several family conference simulations. Key communication concepts were emphasized through repetition and reinforcement. In unblinded pre-post faculty evaluations fellows demonstrated a

statistically significant improvement in three skills: setting an agenda (64% vs. 41%; chi-square, 5.27;  $P = 0.02$ ); summarizing the care the patient would receive (64% vs. 39%; chi-square, 6.21;  $P = 0.01$ ); and outlining the follow-up plan (60% vs. 37%; chi-square, 5.2;  $P = 0.02$ ).

Both fellowships created a didactic series, an original checklist evaluation, and used both self-assessments and simulations to judge trainees' progress. Whereas one was interwoven throughout the year, the other occurred in a single medical ICU rotation.

These studies demonstrate the feasibility of embedding communication training in PCCM fellowship, thereby improving trainees' observable skills and self-confidence. Further study is required to validate these novel assessment tools and measure impact of the educational interventions on patient-centered outcomes, including attention to emotion and to assess optimal structure and duration of curriculum. ■

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### Cheng A, et al.; International Network for Simulation-Based Pediatric Innovation, Research, & Education (INSPIRE) CPR Investigators. Improving Cardiopulmonary Resuscitation with a CPR Feedback Device and Refresher Simulations (CPR CARES Study): a Randomized Clinical Trial. *JAMA Pediatr* (3)

Reviewed by Diana J. Kelm

Health care providers often fail to adequately perform cardiopulmonary resuscitation (CPR) based on the American Heart

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Association guidelines. CPR skills also deteriorate after training (4–6). The American Heart Association launched the Resuscitation Quality Improvement program, which focuses on just-in-time (JIT) CPR training with video-based learning and integrated feedback (7). However, it is unknown whether these tools improve CPR quality.

Cheng and colleagues (3) conducted a multicenter, randomized control study evaluating the use of JIT CPR training and a CPR visual feedback (VisF) device. Participants were divided into no JIT and no VisF (control); VisF alone; JIT alone; and both JIT and VisF. JIT CPR training included a 5-minute CPR training video and 2 minutes of CPR practice with VisF. Those in the no JIT arm practiced without VisF and did not watch the video. The VisF device uses accelerometer technology to assess depth and rate of chest compressions (CCs) with real-time feedback via light-emitting diodes. The lights were covered in the no VisF arm. The primary outcome was the proportion of CCs with a depth of 50 mm or greater. The secondary outcome was the proportion of time that CCs were 100–120 per minute. All participants were involved in a septic shock and a pediatric cardiopulmonary arrest scenario.

There were 27 teams per arm. Baseline characteristics were the same. The mean percentages of adequate depth for control, VisF alone, JIT alone, and both were 12.7, 33.4, 37.9, and 48%, respectively, whereas the mean percentages for CC rate of 100–120 per minute were 27.1, 68.8, 40.7, and 79.2, respectively. The use of JIT CPR training and VisF resulted in a 20 and 15% increase in depth compliance, along with a 12 and 15% increase in rate compliance, respectively. Combined JIT and VisF resulted in the highest compliance for both depth and rate, but this was not statistically significant.

The authors concluded that JIT CPR training before CPR and real-time VisF during CPR, either alone or in combination, improved compliance with AHA CPR guidelines. The study being conducted at multiple institutions, standardization of training and simulation scenarios, and the use of a factorial study design were the strengths of this study. Limitations included the lack of generalizability to real-life patient care, as only two team members were involved in resuscitation, and the simulation occurred within 45 minutes after training, which may have skewed the data. Further studies are needed on the frequency and timing of JIT CPR training. ■

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## Patel MS, *et al.* Association of the 2011 ACGME Resident Duty Hour Reforms with Mortality and Readmissions among Hospitalized Medicare Patients. *JAMA* (8)

Reviewed by Narat Srivali

In 2003, the ACGME implemented an 80-hour duty limit on residents, and in 2011, the ACGME reduced the work hour limit from 30 hours to 16 hours for first-year residents and 24 hours for senior residents (with 4 extra hours allowed for transition of care) (9). The goals were to improve resident health, education, and most importantly, patient safety (10). Although previous studies evaluating the outcome of 2003 duty hour reforms showed no significant changes in mortality, hospital readmission rates, or patient safety (11), studies evaluating the outcomes after the 2011 ACGME reforms were minimal to none.

A total of 2,790,356 Medicare patients who were admitted to short-term, acute-care, and nonfederal U.S. hospitals 2 years before and 1 year after the 2011 reforms were included in the analysis. The main outcomes were 30-day all-cause mortality and readmission. Comparing the more intensive to the less intensive teaching hospitals, the results showed no significant differences in 30-day all-location mortality for combined medical (odds ratio [OR], 1.00; 95% confidence interval [CI], 0.96–1.03) or surgical (OR, 0.99; 95% CI, 0.94–1.04) conditions. Similarly, there was no difference in 30-day all-cause readmissions for combined medical (OR, 1.00; 95% CI, 0.97–1.02) or surgical (OR, 1.00; 95% CI, 0.98–1.03) conditions. Of note, they found that patients admitted with stroke had higher odds of 30-day all-cause readmission after reforms for more intensive, relative to less intensive, teaching hospitals (OR, 1.06; 95% CI, 1.001–1.13); however, it was not significant in the sensitivity analyses.

There were several limitations to this study. The mortality and all-cause readmissions may not have been the right outcome measures to assess. There may have been unmeasured confounding factors due to the observational design of the study. Selection of only Medicare patients in the study makes the results less generalizable. Finally, this study evaluated outcomes 1 year after the reforms were implemented. This may be a problem, as some/most programs may not have implemented these reforms within that time period.

In conclusion, although this study evaluated mortality and readmission outcomes in the year immediately after the 2011 ACGME duty hour reforms implementation, this may be a suboptimal time period to fully assess the outcomes of the reforms. Further studies will be helpful to assess the outcomes over a longer post-ACGME duty hour reform

time period, along with adjusting for multiple confounding variables. ■

**Author disclosures** are available with the text of this article at [www.atsjournals.org](http://www.atsjournals.org).

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