Pilot Study: Structured Pre-Rounding Training to Reduce Stress and Improve Intern Efficiency

Background:
With implementation of electronic health records (EHRs) and expansion of documentation, physician trainees now spend the majority of their time on this indirect care, away from the patient's bedside. With rising rates of depression and burnout partially attributable to these structural components of trainee work, efforts to improve interfacing and efficiency with the EHR have been recommended. We sought to improve entry-level physician trainee stress, efficiency, and organization through a targeted pre-rounding training curriculum.

Methods:
Provided pre-rounding training to first year internal medicine residents at the University of Colorado. Participants provided pre and post intervention survey data. The intervention included a shorthand, abbreviated, and comprehensive method of noting important events and data using the scaffolding of the oral presentation and problem list to guide information gathering. By focusing on systematic information extraction guided by active problems, the process promotes assessment and plan implementation as opposed to entry-level information reporting. We assessed self-perceived 1) efficiency, 2) organization, 3) stress level, 4) time spent pre-rounding, 5) time with patients, 6) time to research treatment plans, and 7) organization of their oral case presentations. We collected qualitative data via open-ended questions.

Results:
91 interns at the University of Colorado completed the pre-survey and intervention, and 42 provided post intervention data. On a rating scale of 1 (low) to 10 (high) interns reported improvement in self-perceived level of efficiency (mean 5.5 to 6.7, $p < 0.001$), organization with pre-rounding (mean 6.0 to 7.3, $p < 0.001$), organization of oral case presentations (mean 6.2 to 7.2, $p = 0.0015$), and lower perceived stress (mean 7.0 to 5.7, $p < 0.001$). Self-reported time needed to pre-round improved (mean 97 to 82 minutes, $p = 0.0013$), average time at the bedside was unchanged (mean 41 in both), and time spent researching treatment plans decreased (mean 31 to 20 minutes, $p = .009$). On a 5-point Likert scale (1- strongly disagree to 5- strongly agree), most interns agreed the training was useful (mean 4.6), would recommend for future interns (mean 4.8), and it helped focus on patient care (mean 4.2). Qualitatively, interns desired this training earlier in residency and desired an electronic version to reduce use of paper and handwriting.

Conclusion:
This work demonstrates early training in systematic pre-rounding that emphasizes thoughtful abbreviation, comprehension, and sequence matching oral case presentations can lead to statistically significant improvements in self-reported trainee stress, efficiency, organization, oral case presentations, and decreased time spent pre-rounding. Interestingly, it did not lead to more time at the bedside or

researching treatment plans, possibly due to the COVID-19 pandemic. Participants expressed a desire for this training early in residency, and in an electronic format. More importantly, this work is that start of a larger problem facing medical providers. It demonstrates the daunting nature of rapidly expanding EHRs, the potential threat to physician wellbeing, stress, and productivity, and the need for thoughtful interfacing and use in the future.