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Unhewn Student Experience: Considering Heuristics in Emergency Clinical Knowledge - A Preliminary Report

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#### **Authors**

Monick, Andrew  
Zhang, Xiao Chi

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numbers over the 10-year period, while bowel and testicular POCUS remained rare.

**Conclusions:** We highlighted the number of specific POCUS exams performed by EM residents overall and identified trends over a 10-year period. Data were limited by the retrospective nature and inability to capture non-saved exams unless reported by residents. This information can inform POCUS training in residency and accreditation.

## 61 Unhewn Student Experience: Considering Heuristics in Emergency Clinical Knowledge – A Preliminary Report

Andrew Monick, Xiao Chi Zhang

**Background:** Diagnostic error continues to detract from patient safety and incur high costs. Cognitive bias is a key source of diagnostic failure. The framing effect poses a particular challenge to emergency physicians (EPs) since quality and sequence of information varies profoundly between cases. The extent to which individual factors augment or reduce susceptibility to the framing bias is unclear, and the role of professional expertise in particular is contested and varies across literature.

**Objectives:** This study aimed to investigate the effects of the framing bias on diagnostic reasoning given varying levels of clinical knowledge and experience. We anticipated that effects attributable to frame would be mediated by years of medical education completed.

**Methods:** This was a single-blind experimental study conducted at an academic medical center. 183 medical students were recruited in 2022. Our inclusion criterion was current enrollment at Thomas Jefferson University as a second to fourth year medical student. Students were randomly assigned to review one of two versions of a case vignette consistent with pulmonary embolism (PE). The two versions contained objectively identical clinical data but varied in frame; where one emphasized features consistent with PE, the other did not. Subjects provided their top three differential diagnoses.

**Results:** Likelihood of identifying of PE differed based upon the frame to which participants were exposed ( $p = 0.000$ ,  $df = 1$ ,  $\phi = 0.392$ ). This effect held upon subgroup analysis of each class year. As academic standing advanced, a greater proportion of respondents within the frame-toward condition identified PE as a diagnosis of interest ( $p = 0.001$ ,  $df = 2$ ,  $\phi = 0.344$ ).

**Conclusions:** Our results suggest that cognitive frame may influence diagnostic reasoning, and the extent to which it does is mediated by clinical experience. These findings can inform future medical education initiatives, particularly within EM.

## 62 Longitudinal Cricothyrotomy Competency Among Residents

Andrew Hybarger, Joseph Turner, Lauren Stewart, Dylan Cooper

**Background:** Cricothyrotomy is a high-stakes emergency procedure. Because the procedure is rare, simulation is often used to train residents. The ACGME requires performance of three cricothyrotomies, during residency, but the optimal number of training repetitions is unknown. Additional repetitions beyond three could increase proficiency, though it is unknown whether there is a threshold beyond which there is no benefit to additional repetition.

**Objective:** The objective of this study was to establish a minimum number of cricothyrotomy attempts beyond which additional attempts did not increase proficiency.

**Methods:** This was a prospective, observational study conducted at the simulation center of an academic emergency medicine residency program. Participants were first- and second-year residents participating in a longitudinal airway curriculum during consecutive years. The primary outcome was time to successful completion of the procedure. In 2020, R1-residents were timed by a trained study investigator during sequential cricothyrotomy attempts. In 2021, first- and second-year residents were similarly timed. Procedure times were plotted as a function of attempt number. Data was analyzed using T-tests, correlation analysis, and repeated measures ANOVA. Pre-procedure surveys collected further data regarding procedure experience and comfort.

**Results:** Forty-one first-year residents participated in the study. Steady improvement in time to completion was seen through the first five attempts with leveling off following the fifth attempt. Results can be seen in Image 1 and Image 2.

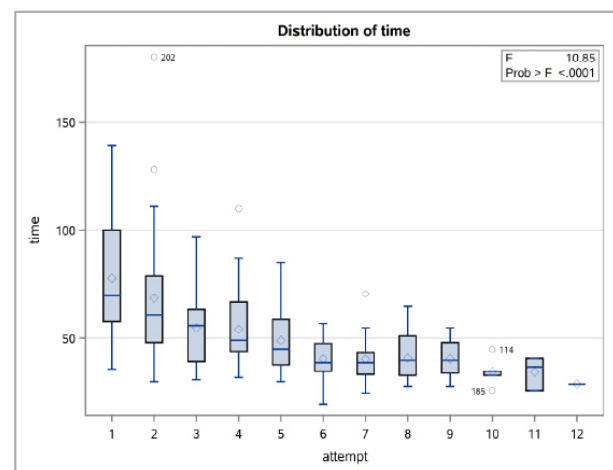


Image 1.