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"Best of the Best" Research Abstracts

1 Increased Use of Generative Artificial Intelligence-Associated Language in Emergency Medicine Residency Personal Statements

Ryan McKillip, Darrow T aylor, Elise Lovell, Ravi Chacko, Andrea Carlson

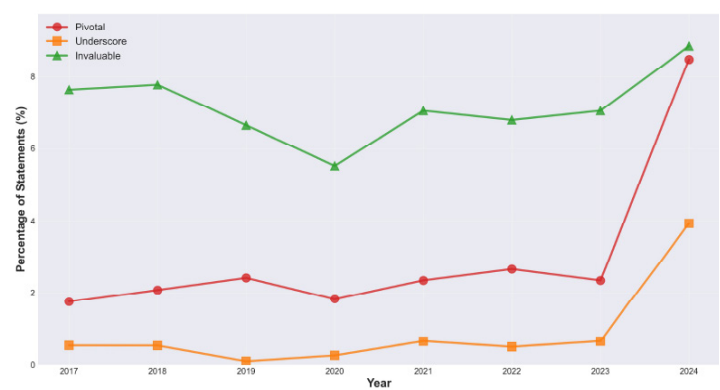
Background: Residency leaders increasingly rely on personal statements to select candidates. The availability of artificial intelligence (AI) writing tools raises concerns that personal statements may reflect AI-generated writing rather than authentic applicant voices.

Objective: Assess the prevalence and impact of AI-generated writing in EM residency personal statements submitted for the 2024 application cycle.

Methods: This retrospective study analyzed personal statements submitted to the EM residency of a large academic medical center from 2017 to 2024. The primary outcome was the prevalence of 27 AI-associated target words identified in prior research, or 12 control words, compared between 2024 and 2017–2023 (pre-widespread release of AI writing tools) using one-sample t tests. Secondary outcomes included complexity (Flesch Reading Ease, word count), lexical diversity (type-token ratio), and personalization (first- and third-person pronoun frequency).

Results: A total of 8,617 statements were studied (7,803 pre-2024, 814 in 2024). The proportion of statements with AI-associated words increased significantly from pre-2024 to 2024 (22.9% vs. 33.2%, $P<0.001$) (Figure 1). Control words were unchanged (84.4% vs. 84.3%, $P=0.720$). Words with the most significant absolute increases were "pivotal" (2.2% to 8.5%), "underscore" (0.5% to 3.9%), and "invaluable" (6.9% to 8.9%) (Figure 2). Word count decreased (686.5 vs. 674.3 words, $P=0.005$). Flesch Reading Ease decreased (43.9 vs. 41.9, $P<0.001$) but remained at the college level. Type-token ratio increased (0.487 vs. 0.500, $P<0.001$), suggesting greater

AI-Associated Words with Greatest Absolute Increases in Prevalence in 2024



lexical diversity. First-person pronouns remained stable (50.7 vs. 51.0, $P=0.383$), while third-person pronouns increased (8.3 vs. 8.8, $P=0.035$).

Conclusions: The 10.3% absolute increase in AI-associated word prevalence suggests that approximately 1 in 10 personal statements submitted for the 2024 application cycle contained AI-generated text. Several changes in writing characteristics were observed, and further study is needed to understand the impact on program decision making.

2 Analysis of the eSLOE Score in ResidencyCAS: Comparing Apples to Oranges

Nathan Baggett, Reed Owens-Pochinka, Sarah Schmidt, Graci Gorman, Bradley Hernandez, Cullen Hegarty

Background: The eSLOE is a key feature of EM residency applications. ResidencyCAS (RCAS) calculates an eSLOE score utilizing an applicant's clerkship grade, estimated guidance and ranking assessments. However, when applicants are evaluated with pass/fail grading, RCAS reassigns the weights for their eSLOE score to disregard grades. This results in applicants being assigned eSLOE scores based on two different formulas. The reliability of this new score has not yet been tested.

Objective: This project aimed to compare our internal eSLOE score with the RCAS eSLOE score and to evaluate the effect of how factors are weighted in the RCAS eSLOE score.

Methods: This was a single-site, cross-sectional study of applicants to our EM residency during the 2025-26 application cycle. Applicants were excluded if they did not receive an eSLOE. We calculated a rating for each eSLOE using our internal scoring system which converts part C of the eSLOE to a numerical score. We calculated the RCAS eSLOE score for all applicants with and without the grades in the formula. We compared the mean and standard deviation (SD) of our internal score and the RCAS eSLOE scores using ANOVA and

AI-Associated and Control Words in Emergency Medicine Personal Statements: Pre-2024 vs 2024

