

UC Irvine

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title

Leveraging Artificial Intelligence to Create Custom Summaries of Emergency Medicine Residency Application Files

Permalink

<https://escholarship.org/uc/item/7jt881j8>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 27(2.1)

ISSN

1936-900X

Author

Silver, Matthew

Publication Date

2026-03-26

DOI

10.5811/westjem.64129

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

6 Leveraging Artificial Intelligence to Create Custom Summaries of Emergency Medicine Residency Application Files

Matthew Silver

Introduction: Holistic review of EM residency applications is a time consuming and cognitively demanding process, often contributing to reviewer fatigue and variability in candidate assessment. Programs need tools that streamline the review workflow, enhance consistency, and allow faculty to focus on attributes most aligned with their mission. While ResidencyCAS provides navigation and customization tools, it lacks flexibility and the ability to provide synthesized applicant summaries. Artificial Intelligence (AI) can be used to provide structured, reviewer-ready summaries tailored to program specific priorities.

Objectives: 1) Develop custom applicant summaries aligned with program specific priorities and selection criteria. 2) Enhance holistic review by ensuring all relevant applicant data is easily accessible and organized for efficient evaluation.

Methods: We implemented an AI-driven workflow using an institutionally licensed instance of Microsoft Copilot that enables secure handling of protected health information (PHI) and personally identifiable information (PII). The workflow begins by exporting applicant files from ResidencyCAS in a database format, followed by applying a detailed prompt within Copilot to parse, normalize, and summarize both structured and unstructured data for each applicant. This process generates reviewer-ready, standardized summaries that include all elements essential for holistic review. The prompt enforces strict parsing rules, section order, and formatting to ensure consistency and accuracy. Additionally, the system supports batch processing of database files and document exports, incorporates robust error handling, and applies rigorous data validation rules. Initial implementation required iterative refinement of parsing logic and output structure to accommodate variability in application data and narrative content, resulting in a streamlined and reliable summary.

Impact: Implementation of this AI-assisted workflow resulted in greater efficiency and improved focus on program specific selection factors. The system's flexibility allows ongoing customization as program needs evolve. Planned next steps include evaluation of reviewer experience and efficiency metrics, along with continued customization and optimization of the prompt.

7 Spin to Learn: A Gamified, Competency-Based Teaching Wheel for ED Bedside Education

Matthew Ryan

Background: On-shift teaching in the Emergency Department is constrained by time pressure, cognitive overload,

and rapid patient turnover. Residents consistently desire brief but meaningful teaching moments. To meet this need, we developed a gamified teaching Spinner Wheel with 12 emergency-medicine–focused prompts designed to energize bedside teaching and promote competency-based micro-learning.

Objectives: To evaluate whether a low-cost, gamified teaching tool can (1) increase learner engagement, (2) promote cognitive flexibility by linking chief complaints to diverse competency domains, and (3) provide a scalable framework for structured bedside teaching in the ED.

Methods: The Spinner Wheel contains 12 topics representing core EM competencies, e.g., disposition, pathophysiology, evidence-based care, epidemiology, ethics, and treatment options. Residents present a case and then spin the wheel, generating a brief, focused discussion that links the chief complaint to the selected topic (e.g., chest pain + epidemiology). Attendings extend the prompt into clinical reasoning, communication, systems-based practice, or medical decision-making. Residents have used the wheel frequently and spontaneously during shifts. The project received IRB approval, and an anonymous evaluation survey has been developed, distributed, and is currently undergoing

Spinner Wheel Teaching Tool: 1-Page Overview

Purpose

A gamified, competency-based micro-teaching tool designed to energize bedside learning in the Emergency Department by linking real-time cases to 12 focused educational prompts.

How It Works

During case presentations, the resident spins a 12-topic wheel. The selected prompt becomes the anchor for a brief, focused discussion tied to the patient's chief complaint. The tool integrates naturally into ED workflow and supports rapid, meaningful teaching.

The 12 Topics

- | | |
|-------------------------------------|-----------------------------|
| 1. Patient Disposition | 7. Ethics |
| 2. Pathophysiology | 8. Documentation Tips |
| 3. 'I Had This Case' | 9. Literature Challenge |
| 4. Evidence-Based Standards of Care | 10. Treatment Plan Options |
| 5. Crafting a Board-Type Question | 11. Pop Culture Connections |
| 6. Fun Facts | 12. Epidemiology |

Implementation

- Used during routine clinical shifts.
- Residents engage spontaneously and frequently.
- Enhances cognitive flexibility, creativity, and clinical reasoning.
- Fits into even high-acuity ED environments.

Evaluation (IRB Approved)

A validated survey assessing educational value, engagement, feasibility, and perceived impact has been distributed to all residents. Data analysis is pending.

Preliminary Resident Feedback

- 100% report the Spinner Wheel enhances learning.
- 100% report topics are relevant and useful.
- Descriptions include: "fun," "engaging," "helps me think beyond the case," and "breaks up the intensity of a busy shift."

Contact

Matthew F. Ryan, MD, PhD
Dept. of Emergency Medicine
University of Florida
mryan@ufl.edu