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

Title

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Permalink

https://escholarship.org/uc/item/17w579t7

Journal

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

ISSN

1936-900X

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Publication Date

2026-03-26

DOI

10.5811/westjem.64134

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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.

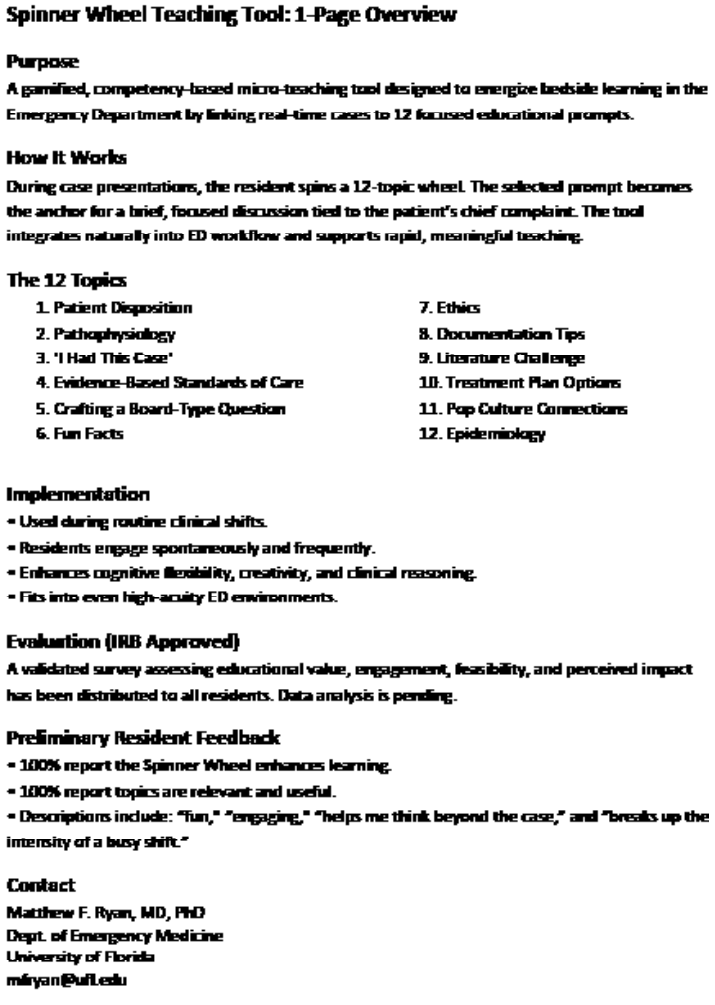
7 Spin to Learn: A Gamified, Competency-Based Teaching Wheel for ED Bedside Education

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

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data collection, using Likert-scale and open-ended questions regarding educational value, engagement, practicality, and cognitive impact.

Results: Preliminary data show 100% of residents who used the Spinner Wheel reported that it enhanced on-shift learning and that the topics were relevant to their clinical cases. Residents describe it as "fun," "engaging," and "a great way to think beyond the immediate case," noting that it "breaks up the intensity of a busy shift" and "makes teaching feel effortless."

Conclusions: The Spinner Wheel is a simple, gamified, competency-based micro-teaching tool that integrates seamlessly into ED workflow. It promotes cognitive agility, engagement, and deeper connections between real-time cases and core EM competencies. This low-cost intervention offers an innovative and scalable model for energizing on-shift learning in emergency medicine.

8 A Simulation-Based Curriculum for Junior Residents on Intrahospital Transport of Critically Ill Patients

Kayla Basedow, Timothy Friedmann, Duncan Grossman

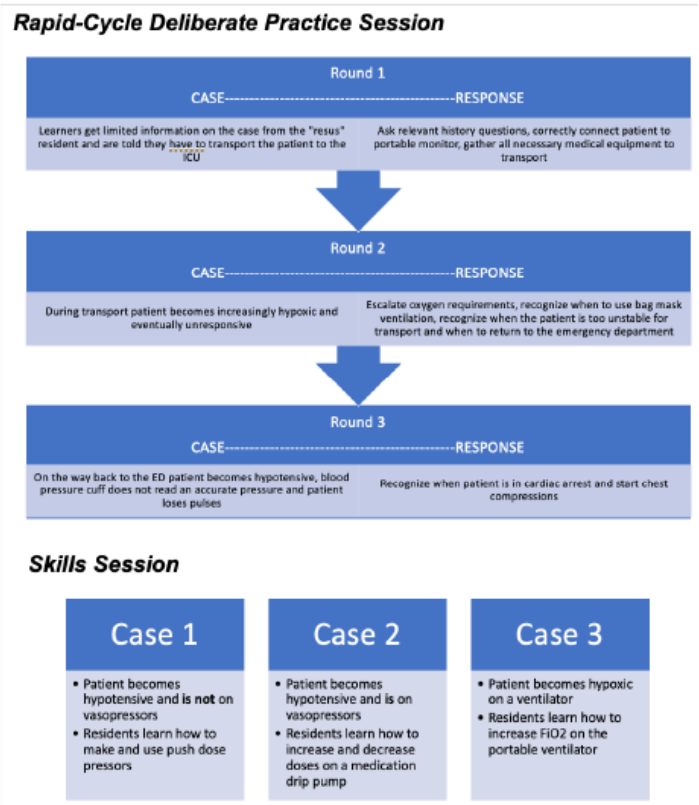
Introduction: Intrahospital transport of critically ill patients from the ED to another destination (ie. Radiology, ICU) is a high-risk period in a patients' care. Literature suggests it is associated with adverse events including vital sign derangements and even cardiac arrest. New residents are often tasked with being the accompanying physician during critical transports despite limited experience with equipment, medications, and critical care. This course aimed to provide standardized training for junior residents to safely manage intrahospital transport.

Objectives: We developed a simulation-based curriculum to train residents to respond to various adverse events during intrahospital transport. The overarching goal of the project was to have residents feel more confident in transporting critically ill patients and develop the necessary clinical skills to respond to adverse events during transport.

Curricular Design: Residents were split into two small groups and completed both sessions. The first was a SIM session using the Rapid-Cycle Deliberate Practice (RCDP) model. Learners managed a critically ill SIM patient they "transported" to the ICU using a high-fidelity mannequin. The SIM patient experienced adverse events including oxygen desaturation, unresponsiveness, hypotension, and cardiac arrest. Per the RCDP model, after each event the SIM was paused for debrief before restarting. The second session was a hands-on, case-based skills lab using real equipment where residents learned three essential tasks: creating push-dose pressors, adjusting IV pump medication doses, and modifying ventilator settings.

Impact/Effectiveness: This course ran in both 2024 and 2025. Residents completed pre- and post-tests assessing critical actions that may be required during transport and rated their confidence in each skill. Confidence significantly improved across all skills in both years. Our residency program received feedback indicating that this was an essential course to continue annually during intern orientation. As a result, the course has now been implemented as a required annual training for all new emergency medicine residents. Future iterations of this study may expand to evaluate higher levels of Kirkpatrick data and potentially assess impacts on patient outcomes.

FIGURE 1:



9 Look, I Finished My PEM Sticker Chart!

Bryan Kane, Dawn Yenser, Kimberly Fugok, Sarah Fish, Kira Galeano, Kyle Wilson

Introduction/Background: Pediatric emergency departments (PED) hosting pediatric emergency medicine (PEM) rotations often have residents from multiple specialties at various stages of training. This creates a challenging teaching environment for both educators and learners. Gamification has been previously demonstrated to effectively engage residents in their education.

Educational Objective: This project sought to develop a gamified approach to tracking EM PGY 1 PEM rotational