USING AI TO SUPPORT EVIDENCE-BASED LEARNING IN FAMILY MEDICINE RESIDENCY

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INTRODUCTION

- Family medicine residents must rapidly integrate evidence-based guidelines across a wide range of clinical conditions, often while facing time constraints and fragmented educational resources.
- This fragmentation can reduce efficiency, limit engagement with primary literature, and contribute to gaps in clinical reasoning development.
- While continuous evidence synthesis is essential for training, information overload and limited study time can hinder effective learning. Artificial intelligence–assisted educational tools may help improve access to and synthesis of clinical information, but concerns remain regarding accuracy, safety, and appropriate use in residency education.
- This project aims to evaluate the feasibility, educational impact, and safety of implementing NotebookLM as a structured learning tool within the St. Joseph Family Medicine Residency Program.

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METHODS

- This six-month educational quality improvement project will be conducted using iterative Plan–Do–Study–Act (PDSA) cycles. Educational inefficiencies will be identified, to improve learning efficiency and clinical reasoning. Residents will be introduced to NotebookLM during academic sessions and will create topic-specific notebooks using vetted sources, including American Academy of Family Physicians and U.S. Preventive Services Task Force guidelines.
- NotebookLM will be integrated into pre-clinic preparation, case conferences, and resident-led teaching sessions.
- Study: Pre- and post-intervention surveys will be used to measure the outcomes. Findings from each PDSA cycle will inform refinements to implementation.

RESULTS

- By the project completion, we will create 10 high quality AI generated lectures, at least 70% of residents are expected to create one or more NotebookLM notebooks.
- The intervention aims to achieve a ≥20% reduction in time spent locating and reviewing clinical guidelines and a ≥1-point increase in confidence in synthesizing evidence into clinical decision-making. NotebookLM will be incorporated into at least one teaching session per rotation block.
- No patient privacy or safety events are anticipated, and faculty oversight time is expected to remain minimal.

OBJECTIVES

- To assess the feasibility, impact, and safety of this structured learning tool in our residency program.

CONCLUSIONS

- The integration of NotebookLM into our residency program is expected to be feasible and well accepted, with potential to improve learning efficiency and clinical reasoning confidence.
- By organizing and synthesizing clinical evidence, it may help residents more effectively connect guidelines to patient care while reducing time spent searching for information.
- This low-cost intervention supports ACGME competencies in practice-based learning and medical knowledge and represents a sustainable model for incorporating evidence-based educational innovation into residency training.

KEY TAKEAWAYS

- ✓ Residents struggle with fragmented resources and
  NotebookLM may improve efficiency and clinical reasoning through organized, vetted content.
- ✓ This low cost project will assess feasibility, impact, and safety in residency training.
- ✓ Expected outcomes include improved efficiency