Advancing Orthopedic Training in an Emergency Medicine Residency: A Curriculum Project

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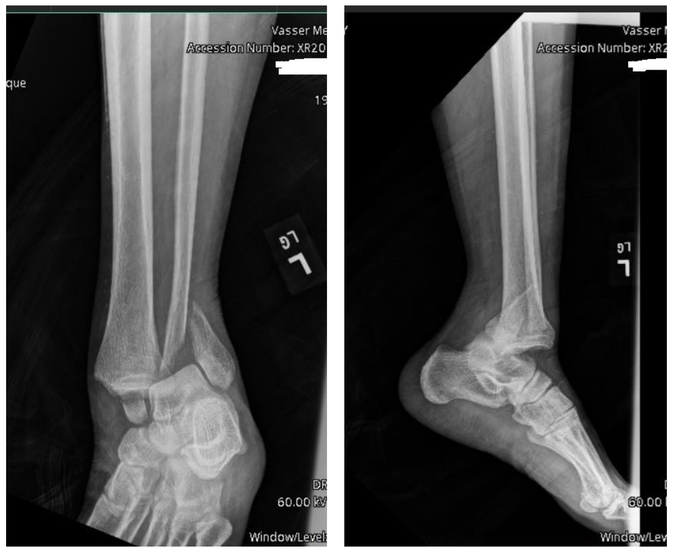
INTRODUCTION

Emergency department (ED) residents frequently encounter orthopedic injuries, yet many report limited confidence and variability in training when managing these conditions.

Given the prevalence and variability of musculoskeletal presentations and the importance of early, appropriate intervention to optimize patient outcome, there is a need for a structured and efficient orthopedic curriculum tailored to ED residency education.



OBJECTIVES

This project focuses on identifying the most effective methods for engaging emergency department residents in learning orthopedic problem management.

Recognizing that traditional teaching approaches may not fully address the practical and time-sensitive demands of the ED, the curriculum will compare multiple instructional formats to determine their relative impact on knowledge acquisition, skill development, and learner engagement.

By incorporating and evaluating these varied modalities, the project aims to better understand how residents learn most effectively in the context of orthopedic emergencies .

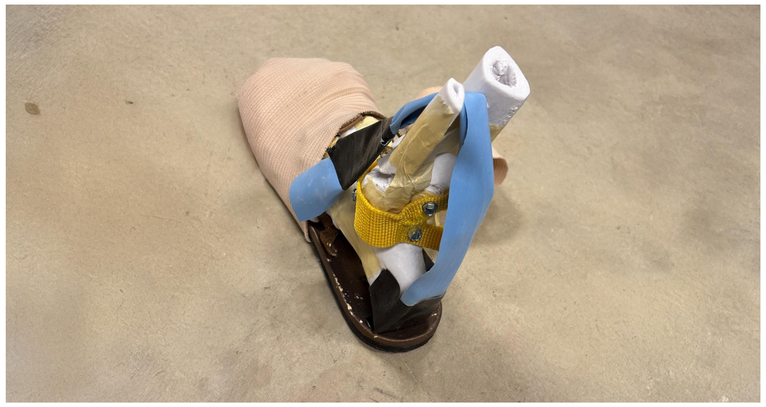
METHODOLOGY

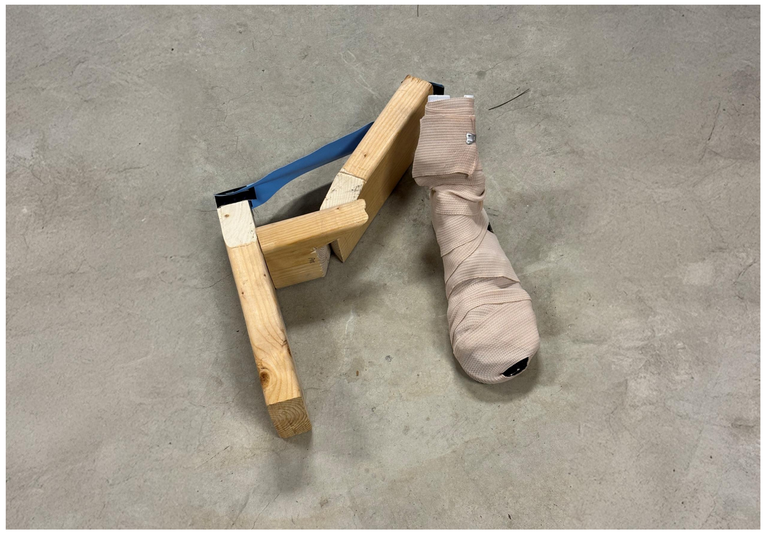
Large-group didactic lectures (30–60 minutes) designed to deliver foundational knowledge efficiently.

Shorter, small-group discussions (approximately 25 minutes) that emphasize case-based learning, clinical reasoning, and active participation.

Hands-on simulation sessions or procedural demonstrations that allow residents to practice practical orthopedic skills in a controlled environment.

Learner preferences, engagement levels, and performance outcomes will be assessed to guide curriculum refinement through surveys.





NEXT STEPS

Follow the Kirkpatrick Model in evaluation of teaching goals

Develop surveys for residents and supervising physicians to assess skills and knowledge learned.

Develop pre and post session evaluations based on Freedman Bernstein exams, to assess resident learning and retention of essential orthopedic principles.

Develop more fracture/dislocation sim models for a variety of pathologies and body parts.

REFERENCES

Freedman KB, Bernstein J. The adequacy of medical school education in musculoskeletal medicine. J Bone Joint Surg Am. 1998 Oct; 80 (10):1421-7.

Schmitz G., et.al. Assessment of an Orthopedic Surgery Rotation on Musculoskeletal Competency in Emergency Medicine Residency Training. J Surg Educ. 2020 Jul-Aug; 77(4): 986-90.

Cummings DL, et.al. MSK30: a validated tool to assess clinical musculoskeletal knowledge. BMJ Open Sports & Exercise Med. 2019Mar 1.

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