

# Evaluation of Novel Radiology Curriculum at the University of Minnesota Medical School

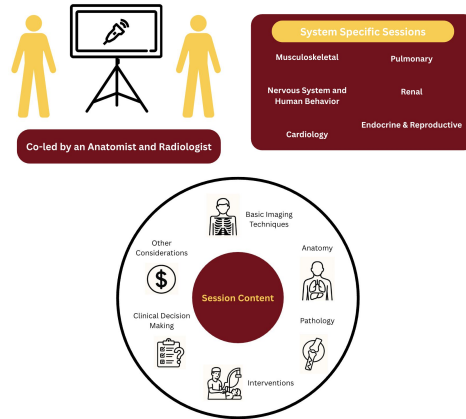
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## Background

- Diagnostic imaging is integral to modern clinical decision making, yet preclinical exposure to diagnostic radiology is limited. Few medical schools require a dedicated radiology clerkship, and education is often fragmented within other courses.<sup>[1,2]</sup>
- Early, integrated radiology instruction is needed for students to develop imaging interpretation skills, understand radiology's role in clinical decision-making, and recognize important patient safety considerations.<sup>[2-3]</sup>
- Board examinations such as USMLE Step 1 and 2CK increasingly incorporate diagnostic imaging, which require efficient and applied imaging interpretation.
- University of Minnesota (UMN) Medical School students sought to address the gap in radiology education by implementing preclinical sessions introducing core imaging concepts, interpretation skills, and case-based clinical reasoning.
- The UMN curriculum is systems-based; therefore, sessions focus on the relevant organ system block.
- Sessions are co-led by anatomists and radiologists to provide clinical context.
- This study aimed to better understand session outcomes through surveys.



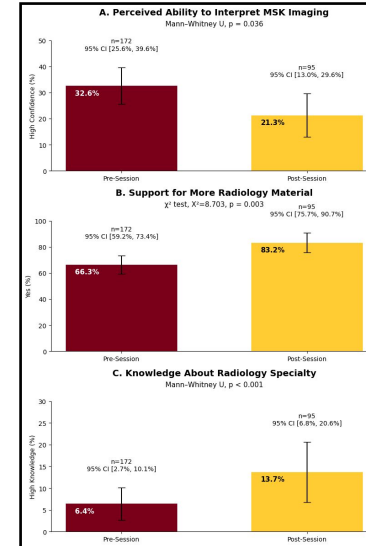
## Session Structure



## Methods

- Anonymous pre- and post-session surveys evaluated changes in students' self-perceived competency, radiology specialty knowledge, and curricular preferences.
- Statistical significance for Likert-scale items was found using Mann-Whitney U tests on the full ordinal data, while figures used dichotomized confidence categories ("Low/Average" 1-2, "High" 3-4 or 4-5).
- A Pearson Chi-Square test assessed changes in support for more content integration by comparing "Yes" responses against "No/Unsure."

## Results



**Figure 1: Pre- and post-session survey results of preclinical MSK radiology session.** Panel A, perceived ability to interpret MSK imaging decreased post-session (Pre: 32.6% ± 7.0%; Post: 21.3% ± 8.3%;  $p = 0.036$ ); Panel B, support for more radiology material increased (Pre: 66.3% ± 7.1%; Post: 83.2% ± 7.5%;  $\chi^2 = 8.703$ ,  $df = 1$ ,  $p = 0.003$ ); Panel C, knowledge about the specialty increased (Pre: 6.4% ± 3.7%; Post: 13.7% ± 6.9%;  $p < 0.001$ ).

## Discussion

Overall, the session significantly improved students' perceived knowledge of the radiology specialty while recalibrating their self-assessed interpretation ability, reflecting a more realistic appreciation of the field's complexity. The observed decrease in confidence implies recognition of the advanced skills required and highlights areas of future development. The rise in support for additional radiology instruction underscores the value of these sessions. Continued integration across remaining preclinical system blocks may further enhance radiology preparedness and engagement.

## Future Directions

- Continue sessions throughout the system blocks of the preclinical curriculum
- Obtain data and feedback to implement for future sessions
- Incorporate interventional radiology cases and faculty

## References

- [1] The State of Medical Student Teaching of Interventional Radiology: Implications for the Future. Goldman DT, Magrawski A, Rochon PJ, et al. Journal of the American College of Radiology. JACR. 2018;15(12):1761-1764. doi:10.1016/j.jacr.2018.07.016.
- [2] The State of Radiology Teaching Practice in Preclinical Medical Education: Survey of American Medical Students and Faculty. Rubin Z, Blackham K. Journal of the American College of Radiology. JACR. 2015;12(4):403-8. doi:10.1016/j.jacr.2014.11.010.
- [3] Preceptorship: Mandatory Radiology Education for Medical Students. Farnakiss SG, Chertoff JD, Straus CM, Barth RA. Academic Radiology. 2023;30(7):1500-1510. doi:10.1016/j.acra.2022.10.023.