Perceptions of Radiology Residency Staffing Models Across Years of Training

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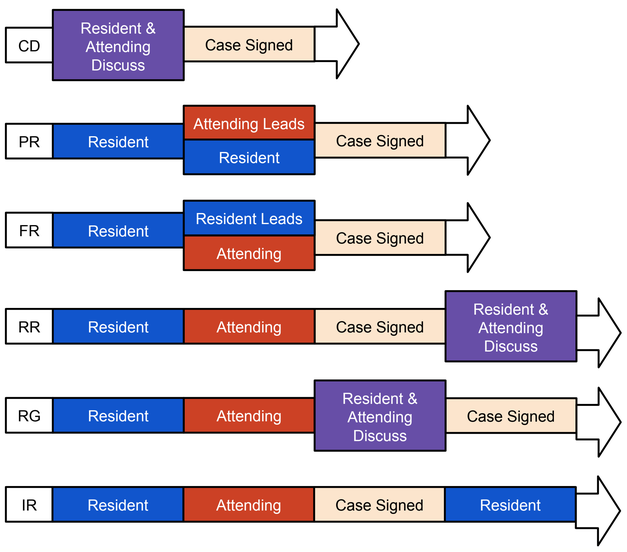
Introduction

- Case staffing is the primary method by which radiology residencies teach at the workstation [1].
- Despite this, the styles and methods for how staffing is performed have not yet been comprehensively described.
- Understanding these models and evaluating resident perspectives can inform best practices and enhance radiology education.

Aims and Objectives

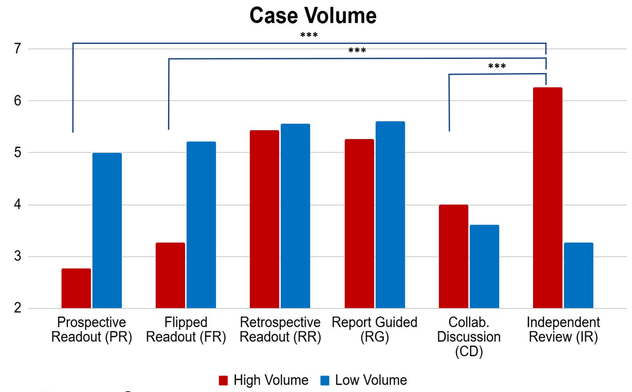
- To define commonly used radiology staffing models.
- To assess the uses and perceptions of each model by residents.

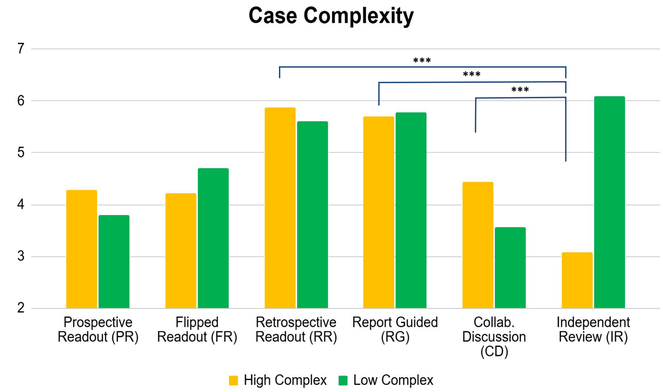
Visual Representation of Staffing Models



Methods

1. Six staffing models were defined based on resident and faculty interviews: prospective readout (PR), flipped readout (FR), retrospective readout (RR), report guided (RG), collaborative discussion (CD), and independent review (IR).
2. Residents within a single, large healthcare institution were then surveyed to rate each model primarily using a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) and to rank overall preference for each model from 1 to 6 (1 = most preferred, 6 = least preferred).
3. Multiple domains, including effectiveness during periods of high/low volume or complexity, quality of resident learning, and efficacy when staffed in-person or remote were compared for each staffing model, and descriptive statistics were calculated.





***Statistical significance determined using pairwise comparisons following the Friedman test with Bonferroni correction (*p < 0.003). Statistical annotations limited to comparisons involving IR in high volume/complexity conditions for clarity.

Results

- Thirty-seven surveys were collected, with 43% representing junior residents (R0-R2) and 57% representing senior residents (R3-fellow).
- The overall preferences for staffing models based on mean ranking (lower values indicating greater preference) were as follows: RR [2.18] > RG [2.48] > FR [3.57] > IR [3.76] > PR [4.19] > CD [4.86].
- RR and RG were overall preferred to PR and CD ($p < 0.003$), and RR was preferred over IR ($p < 0.001$).
- Retrospective readout had the highest mean Likert scores in high-complexity cases (5.87/7), and both in-person (6.17/7) and remote staffing (5.78/7).
- Collaborative discussion had the lowest mean Likert scores for efficacy in low-complexity cases (4.43/7) and remote staffing (2.35/7).
- Although independent review was rated the worst for teaching (2.78/7), it was rated most productive (6.30/7) and was preferred for high-volume (6.26/7) or low case complexity (6.09/7).
- Residents rated the efficacy of models in which attendings had not reviewed the case prior to discussion (CD, PR, and FR) much lower when done with an off-site attending compared to in-person.

Conclusions

- The six defined staffing models used in this study can serve as a foundational framework for further investigation and improvements in radiology resident education and training at the workstation.

Discussion

- Differential use of staffing models may help to optimize workflow and improve the quality of resident learning depending on factors such as case volume or complexity, remote or in-person staffing, and training level.
- Establishing formal definitions for commonly used staffing models may facilitate collaboration in radiology education across institutions.
- Remote staffing practices have persisted post-pandemic [2] but may be less compatible with staffing models traditionally conducted in person.

References

1. Recht MP, Fefferman NR, Bittman ME, et al. Preserving radiology resident education during the COVID-19 pandemic: The Simulated Daily Readout. Academic Radiology. 2020;27(8):1154-1161. doi:10.1016/j.acra.2020.05.021
2. Gordon EB, Wingrove P, Branstetter BF IV, Hughes MA. Evidence for an adverse impact of remote readouts on radiology resident productivity: Implications for training and clinical practice. PLOS Digital Health. 2023;2(9):e0000332. doi:10.1371/journal.pdig.0000332