

Background

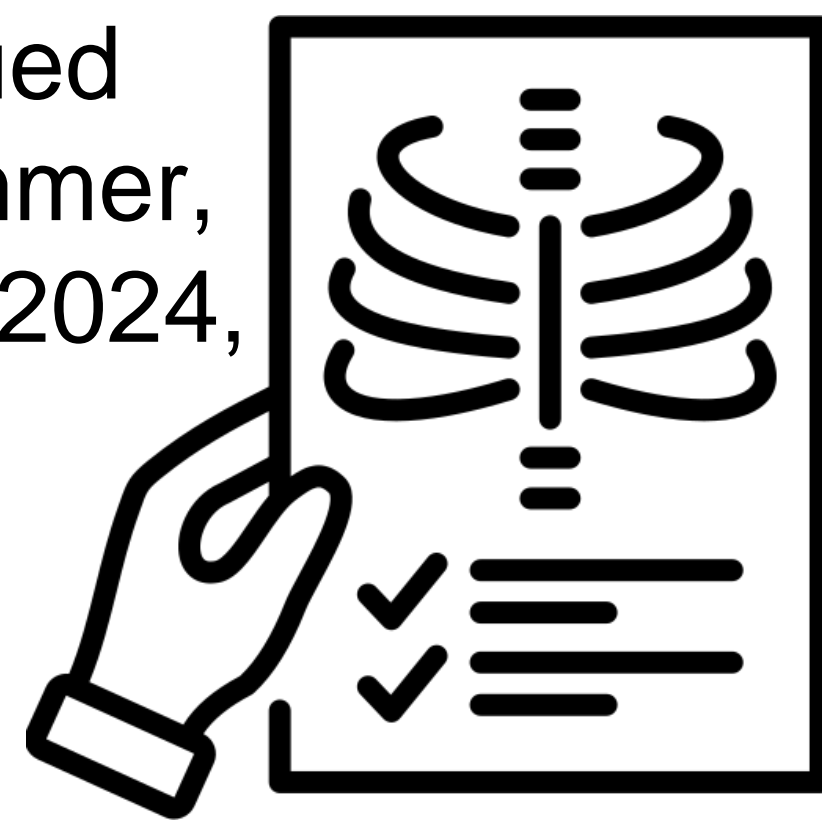
- Radiology residents are primarily responsible for issuing preliminary afterhours on call radiology reports at many large academic centers which are often only finalized by a staff radiologist the following work day
- While discrepancies rates between resident reports are often low, concerns remain for the impact on patient care as well opportunities to identify and implement strategies to bridge learning gaps for radiology residents

Objectives

- (1) The goal of this quality improvement study was to identify the rates and types of radiology report discrepancies at our institution and
- (2) To compare the rates of discrepancies rates at our single institution with those reported in the literature

Methods

- All CT and ultrasound radiology reports issued by PGY2-4 residents for representative summer, fall and winter months of July 2024, October 2024, and January 2025 were assessed
- Discrepancies were then categorized into one of the following categories based on degree of potential patient impact and need for additional imaging and/ or clinical follow up:



1. Change or addition to primary diagnosis
2. Findings requiring urgent follow-up imaging
3. Findings requiring return to emergency department
4. Incidental findings with non-urgent follow-up



Results

- A total of **14,093** CT and ultrasound reports were identified of which **1.4% (n=208 studies)** were found to have a discrepancy between preliminary radiology resident and finalized staff radiologist report
- These discrepant reports were subdivided into 4 different categories

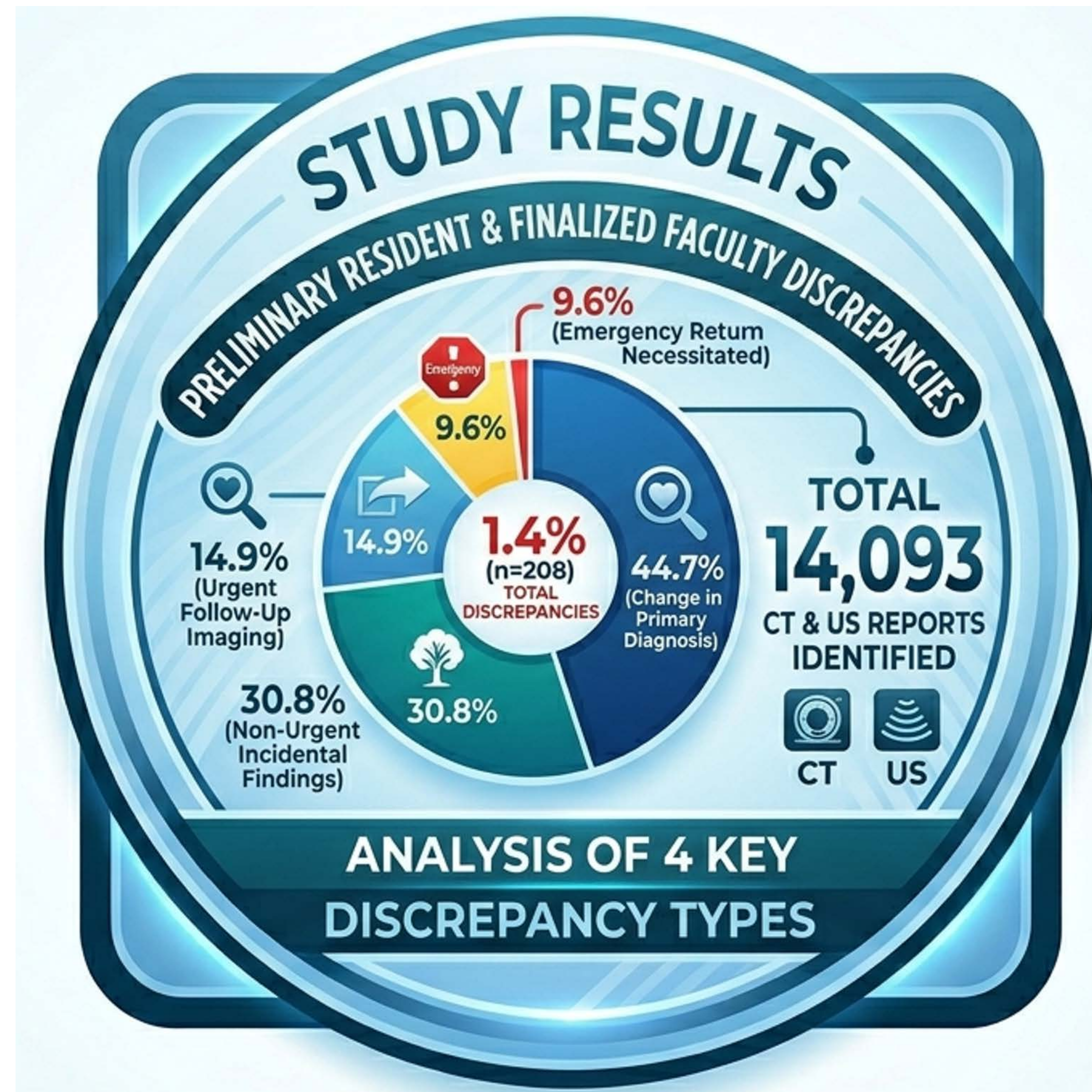


Figure 1. Illustration depicting total number of studies analysed, discrepancy rate and subcategories

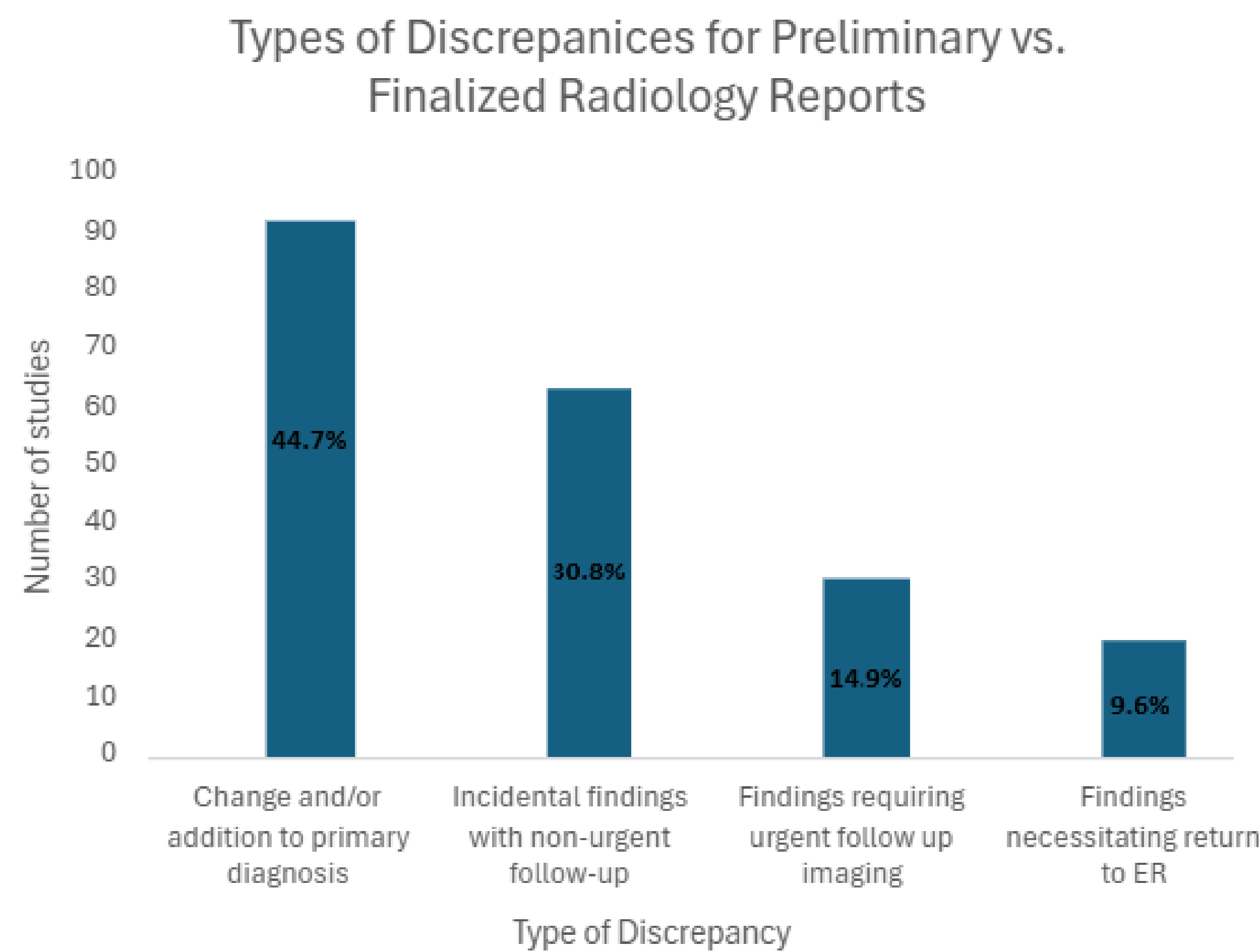


Figure 2. Graph depicting discrepancy rates and categories of resident vs. staff radiologist reports

Discussion

- Our institution's discrepancy rates were overall low (1.4%) and comparable with those reported in literature (Weinberg et al., O'Flaherty et al.), showing that after-hours reporting by radiology residents at our institution is reliable and meets established benchmarks.
- Of the low number of total discrepancies, a significant proportion ~45% of affected the primary diagnosis, highlighting the critical role of faculty review in diagnostic accuracy.
- Fewer than 10% of discrepant cases warranted the patients to return to ED urgently. This highlights the need for targeted education to help bridge learning gaps and ensure familiarity and comfort with critical must not miss diagnoses amongst radiology residents

Future Directions

- While our institutions discrepancy rate remains low, aligning with reported benchmarks, there remains a need for more detailed analysis by body system as well as trainee level. This will not only help identify where the gaps lie but also help with creating a tailored curriculum for radiology residents and ultimately help improve patient outcomes



References

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2. O'Flaherty S, et al. After-hours CT report discrepancies: evaluating radiology resident performance. Emerg Radiol. 2025. [PMID: 41361131] Cooper JG, et al. Overnight radiology resident discrepancies at a large pediatric hospital: categorization by year of training, program, imaging modality, and report type. Pediatr Radiol. 2021;51(5):715-722. [PMID: 33406888]
3. Valenzuela J, et al. Discrepancy rate and clinical impact of preliminary reports from radiology residents. Insights Imaging. 2023;14(1):135. [PMID: 37548777]
4. Yoon LS, et al. Resident interpretation of abdominal CT in the ER with comparison to attending radiologist's reports. Emerg Radiol. 2002;9(5):297-302. [PMID: 15290558]