From Curiosity to Career: Guiding Medical Students to Diagnostic Radiology

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Background:

Imaging plays a critical role in diagnosing, monitoring, and treating patients across the U.S. healthcare system. Prior to the COVID-19 pandemic, both imaging volumes and image-guided procedures had reached record levels and are expected to continue rising. Nearly every medical specialty relies on imaging and, by extension, radiologists. As highlighted in recent literature, educating medical students in radiology is vital—not only for future radiologists but for all clinicians—to ensure they understand how radiology integrates into routine clinical care. Despite this, radiology remains underrepresented in U.S. medical school curricula. Calls for greater emphasis on radiology training for medical students have persisted for decades from both faculty and trainees across various specialties.

Purpose:

- Understand the current radiologist shortage in the US and its impact on patient care and workforce sustainability.
- Explore strategies to address the shortage by boosting medical student interest through early exposure, mentorship, addressing misconceptions, and expanding training opportunities.
- Analyze trends in Diagnostic Radiology (DR) residency applications, geographic distribution of programs, and radiology's representation in core medical school curricula in the US.

Residency Applications and Program Distribution:

There were 1,057 Diagnostic Radiology PGY-2 positions in the 2025 Match, of which 1,042 (98.6%) were filled. Although the number of available positions increases annually, the match rate remains high, indicating a strong interest in Diagnostic Radiology among medical students.

Program Distribution



Majority of residency programs are centered in large urban areas, with under representation in the Mountain and West North Central Regions.

Strategies to Boost Interest:

- Medical school radiology interest groups
- Mentorship for underrepresented students
- Diversity initiatives (e.g. 'Women in Radiology' Panels)
- Integration of radiology into core medical school curricula
- Campaigns clarifying misconceptions about patient interaction and AI integration

Medical School Representation:

Radiology is underrepresented in medical school curricula, with under 40% of schools offering radiology courses and under 25% requiring a rotation. In previous studies across the US (Rohren et al. 2022, Bransetter et al. 2003), majority of medical students have reported unfamiliarity with the ACR appropriateness criteria, and a perception that Radiology is underrepresented within curricula, particularly in the clinical years. In a study performed at the University of Michigan, early exposure to radiology has shown to increase interest in the specialty, where a dedicated two-week preclinical radiology course boosted interest by 15%, with an over 20% rise in participating students viewing such a course as essential.

Considerations when Integrating Radiology into Medical School Curricula:

- Recognize radiologists as the teachers of medical imaging.
- Integrate radiology-based teaching from early stages of medical school, including within anatomy teaching.
- Create educational goals and systems to provide a uniform radiology medical student experience across the US.
- Set a competency standard for medical students to follow to ensure adequate knowledge prior to clinical practice.

Conclusions:

The radiologist shortage threatens patient care, with over 1,800 open positions on the ACR job board and a predicted shortage of 42,000 by 2023. Boosting medical student interest through early exposure, mentorship, integrating radiology into curricula, and addressing misconceptions is critical. Advocacy for expanded training positions and educational campaigns can strengthen the pipeline for the future workforce.

Despite high residency fill rates, only 12% of interested matriculants maintain that interest through graduation. Residency programs remain concentrated in urban areas, leaving underserved regions vulnerable to workforce shortages. The Resident Physician Shortage Act aims to expand GME positions, but progress is slow.

References