Temporal Shifts in Trainee Participation in Radiologists' Workload: A National Medicare-Focused Analysis (2008-2020)

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INTRODUCTION

- Academic radiology values teaching, research, and mentorship.
- Increased integration of academic radiology and community practices challenges the traditional mission and description of an academic radiologist.
- Radiologists in teaching roles are expected to match clinical productivity expectations of non-teaching radiologists.
- Increasing call responsibility, risk of error, and requirements of academic citizenship may lead to increases in burnout.
- Effect on recruitment and radiologist self-image is unclear.

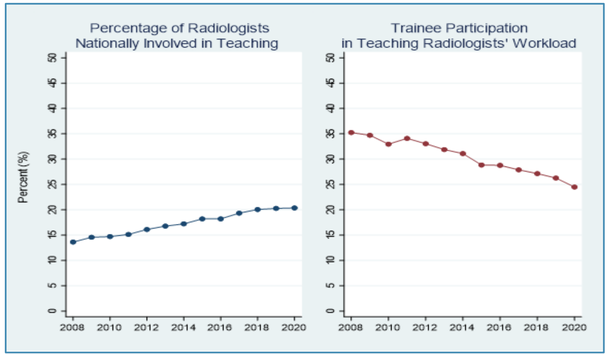
PURPOSE

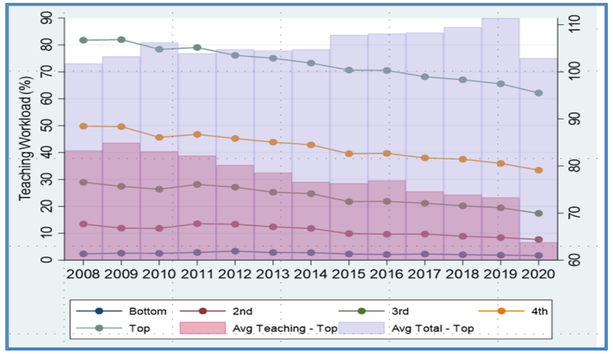
- Increasing productivity expectations may impact the relative role of trainees in radiologists work effort.
- We sought to identify trends in the clinical supervision and teaching workloads of academic radiologists
- We assessed temporal shifts in trainee participation in radiologists' workload nationally from 2008-2020.

DATA SOURCES

- **Medicare 5% Research Identifiable Files (RIF)** (*2008 -2020*)
  Identify radiologists who interpreted noninvasive diagnostic imaging for Medicare Part B FFS beneficiaries
- **Neiman Imaging Types of Service (NITOS)**
  Identify professional services corresponding with noninvasive diagnostic imaging
- **CMS Doctors and Clinicians database** (*2014-2020*)
  Radiologist and practice characteristics
- **Rural-urban commuting area (RUCA)-ZIP code crosswalk**
  Determine rurality at the ZIP code-level
- **ACR Neiman Health Policy Institute Identification of Academic Radiology Practices**
- **Exclusions:**
  - Radiologists billing fewer than 50 wRVUs
  - Graduated medical school within past 6 years

KEY FINDINGS



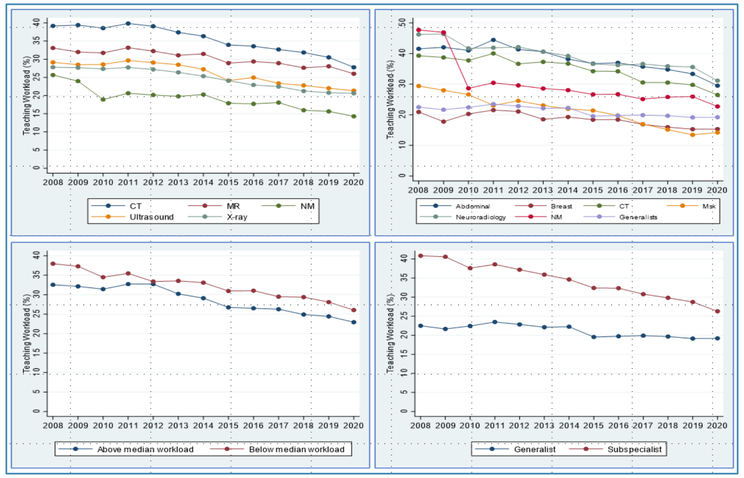


1. The percentage of all radiologists involved in teaching has increased from 13.6% -> 20.4%.
2. Average trainee participation in total workload among teaching radiologists decreased from 35.3% -> 24.5%.

- Average total teaching workload was stable throughout the study period.
- Decreasing average teaching workload among teaching radiologists, regardless of overall teaching workload share.
- Greater teaching workload -> steeper decline.

Stable trend when stratified by:

- Modality
- Subspecialty
- Total workload
- Subspecialty status



Stable trend when stratified by physician and practice characteristics *(not shown)*

METHODS

- **"Teaching Radiologists"** = Radiologists billing using Medicare's GC modifier, indicating trainee supervision
- **"Teaching Workload Share"** = % of total workload with trainee supervision
- **Mean trainee participation** in workload determined for:
  - (1) Teaching radiologists overall
  - (2) Stratified by radiologist and practice characteristics
- **Average teaching workload share** stratifying by:
  - (1) Modality, body region, and practice location
  - (2) Physician characteristics: subspecialty, total workload, gender, experience, practice type, and practice size

RADIOLOGISTS SAMPLED

- **Overall** = 35,595 physicians (284,314 physician-years)
- **Teaching radiologists** = 10,818 physicians (49,378 physician-years)

CONCLUSIONS

1. **From 2008 to 2020, the % of radiologists involved in resident teaching increased, while trainee participation in individual teaching radiologist' workload has decreased**
2. **This dispersion effect could have implications for the quality of education efforts.**
3. **For teaching radiologists, increasingly independent work likely diminishes unique differentiators between academic and community practice, possibly augmenting burnout, adversely impacting job satisfaction, and impacting sustainability of a robust academic radiologist workforce.**