



# A Geographic Comparison of the Medical Physics Job Market and Accredited Residency Program Distribution.



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## PURPOSE / OBJECTIVES

- **Workforce Shortages in Underserved Areas:** The medical physics job market is facing challenges, particularly in non-academic and rural settings, due to a mismatch between job locations and training program sites.
- **Uneven Residency Distribution:** Although residency programs have increased in number, their uneven geographic distribution limits access to training and employment opportunities in underserved regions.
- **Impacts of Industry Changes:** Advances in technology, shifting clinical needs, and evolving healthcare policies are driving changes in the profession, which may further complicate workforce distribution and access to care.
- This study examines the geographic distribution of medical physics residency programs relative to job opportunities across the USA to identify disparities and inform workforce strategies aimed at improving access to high-quality radiation oncology care.

Geographic Distributions of Residency Positions and Job Market Characterization

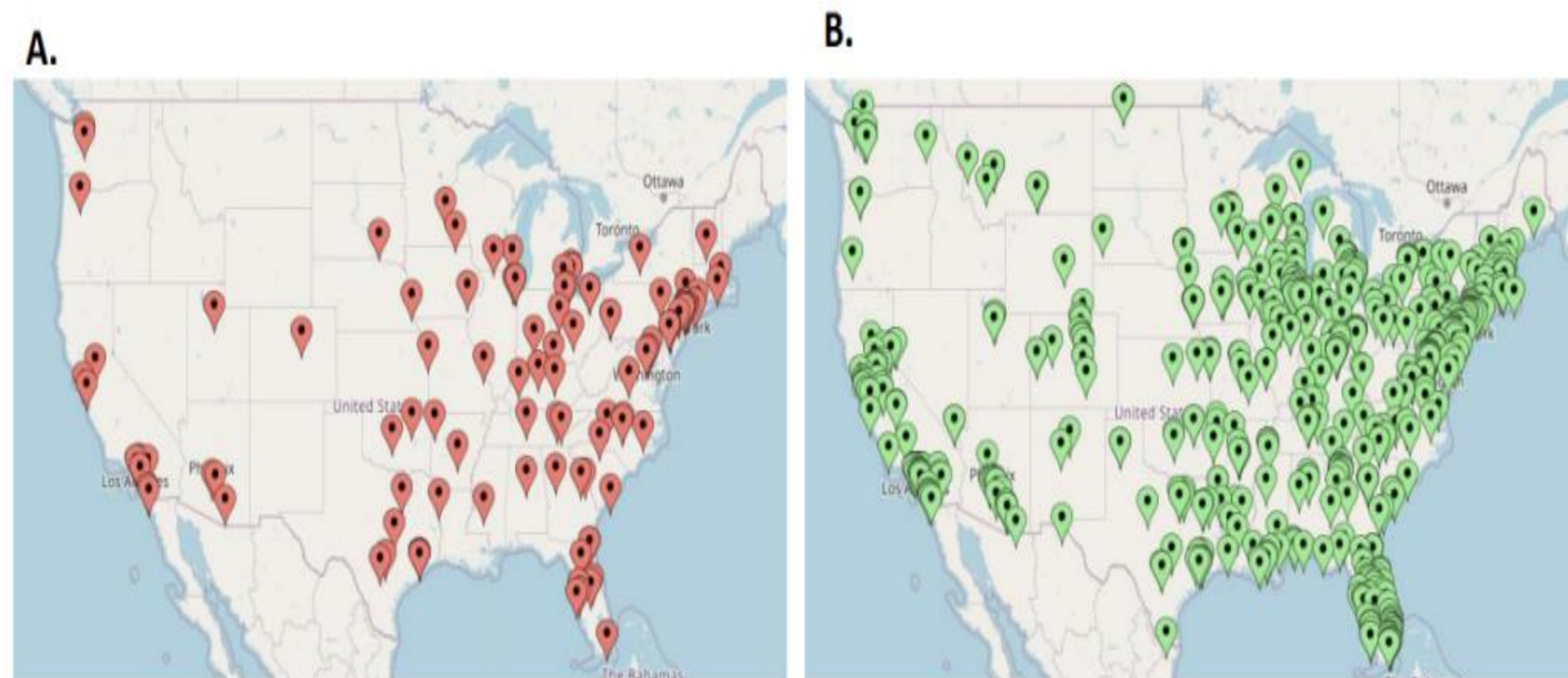
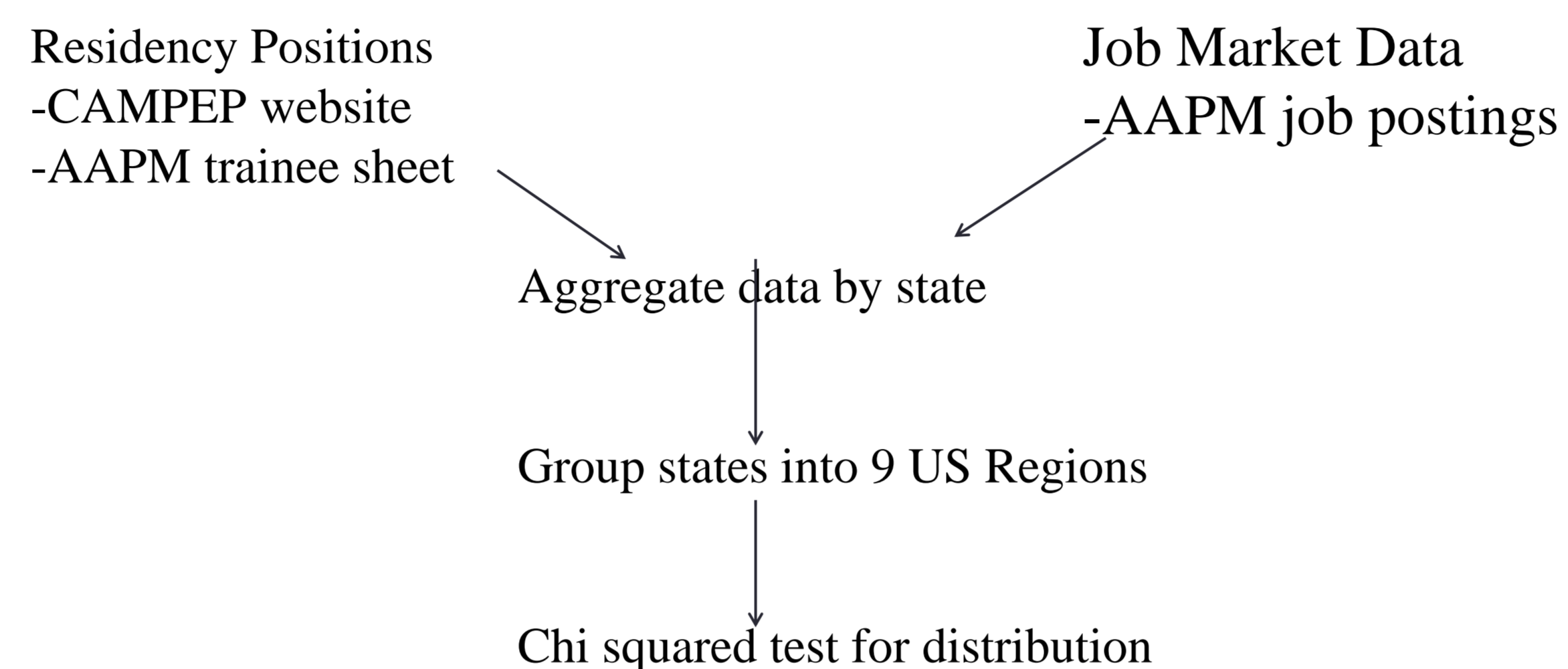


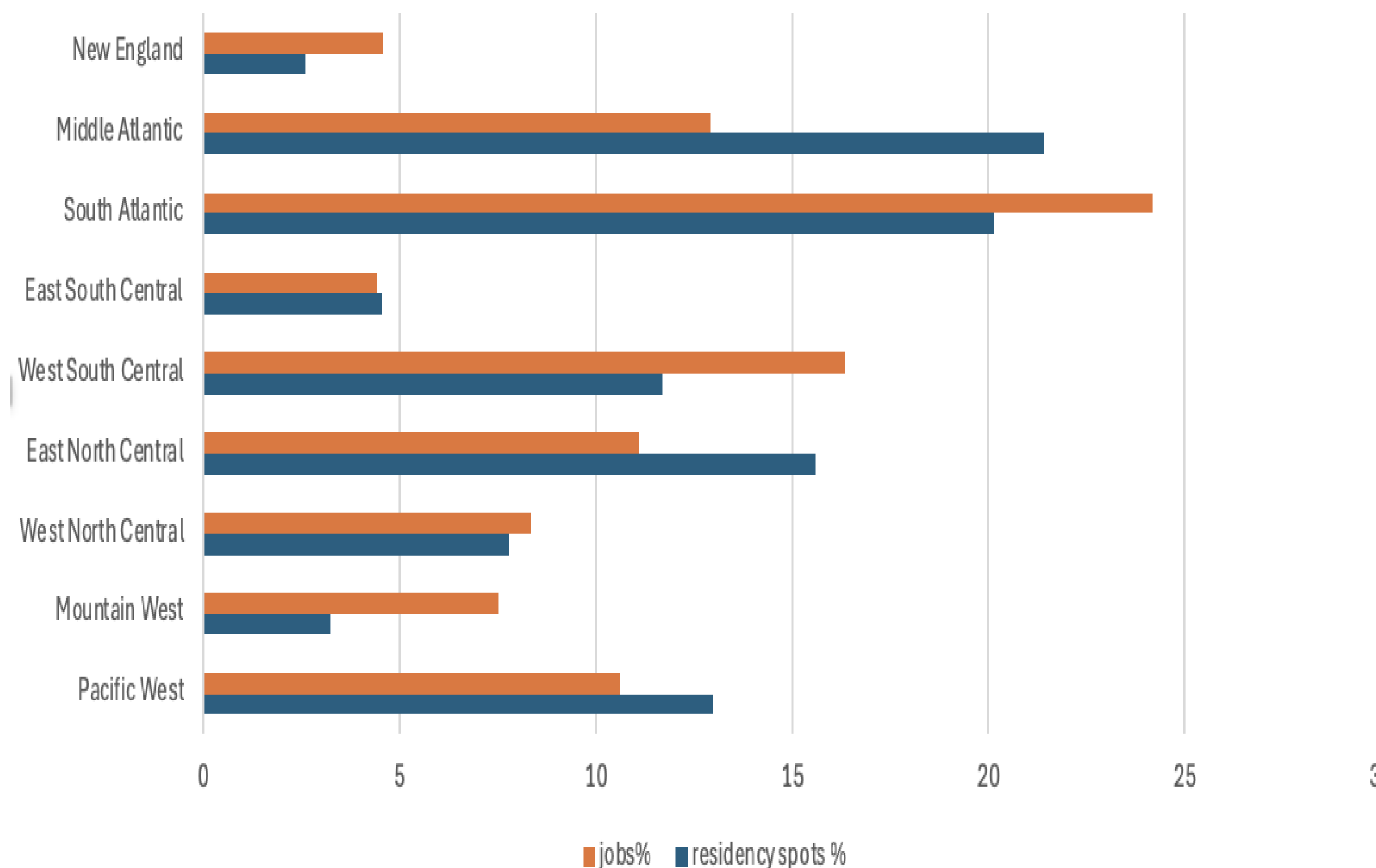
Figure 3. Geographic distribution of identified therapeutic medical physics residency programs (A.) and a proxy for the job market (B.).

## MATERIAL & METHODS



## RESULTS

Distribution of medical physics residency programs vs jobs openings by region



A total of 612 medical physics job openings and 154 residency spots were identified and used in the analysis. Chi-squared analyses at both the statewide ( $p = 0.0358$ ) and regional ( $p = 0.0088$ ) levels revealed significant mismatches between the geographic distribution of residency positions and job market demands.

## DISCUSSION

- This analysis identified a significant discrepancy between the distribution of medical physics residency programs and job availability at both state and regional levels, with many areas facing high job demand but limited training opportunities.
- Such misalignment may exacerbate recruitment challenges, particularly in underserved regions.
- These findings represent an initial step in understanding workforce distribution and training gaps in medical physics, highlighting the need for further research to better align residency training with job market demands.

## LIMITATIONS

- **Incomplete Job Data:** AAPM postings and Varian data may miss jobs at smaller or non-Varian sites.
- **Short Timeframe:** Data span only five months, missing seasonal or long-term trends.
- **No Job Type Breakdown:** Entry-level, senior, and academic roles were not separated.

## FUTURE DIRECTIONS

- **Expand Timeframe:** Analyze job and residency data over multiple years to track trends.
- **Differentiate Job Types:** Separate jobs by level and setting to better match training with demand.

## CONCLUSION

- **Mismatch Found:** Residency programs and job openings are unevenly distributed across regions.
- **Action Needed:** Better alignment is essential to address workforce gaps, especially in underserved areas.