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**An Analysis of Diversity Based on Race and Ethnicity in the Radiation Oncology Workforce.**

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**Background/Purpose:** The American Association for Cancer Research has created initiatives to increase the participation of minority scientists in cancer research, while the American Society of Clinical Oncology has similarly set the objective of diversifying the clinical oncology workforce as a “requisite to improving cancer care for the underserved.” Studies indicate racial/ethnic minority providers are more likely to serve in minority and medically underserved communities and more likely to pursue research on health disparities. The Association of American Medical Colleges (AAMC) recently examined diversity in the oncology workforce in *Forecasting the Supply of and Demand for Oncologists*, however, data on Radiation Oncology (RadOnc), specifically, were not included. To our knowledge, no published studies have examined racial/ethnic diversity within RadOnc. Nearly two-thirds of all cancer patients will undergo radiation therapy during their treatment course. The purpose of this study was to assess the diversity of the RadOnc workforce, with particular attention to the resident trainee level, and compare the findings to that of medical school graduates, Hematology/Medical Oncology (MedOnc) fellows, and the general population.

**Methods:** The most recent available public registries (2004-2010) from the American Medical Association, AAMC, and United States Census were used to assess racial/ethnic diversity. Significant differences in race/ethnicity were investigated between RadOnc residents and: 1) medical school graduates, 2) MedOnc fellows, and 3) RadOnc practicing physicians. All levels were compared to the general population. Statistical analyses were performed using chi-squared test.

**Results:** Based on 2007 data, there was a significant decrease in representation of Blacks from medical school graduates to RadOnc residents (6.7% vs. 3.4%,  $p=0.0038$ ), an increase of Asians (20.4% v. 29.1%,  $p<0.0001$ ) and no change for Hispanics (6.8% vs. 7.2%,  $p=0.91$ ). Blacks submitted on average less RadOnc residency applications (28.5) than did Whites (35.4), Asians (35.7), or Hispanics (36.0); overall mean 34.3. When comparing RadOnc and MedOnc trainees, there was no difference in Blacks (3.4 vs. 3.7%,  $p=0.87$ ) and Hispanics (7.2 vs. 7.4%,  $p=0.90$ ), less Asians (29% vs. 36%,  $p=0.006$ ), and more Whites (59.2% vs. 52.9%,  $p=0.019$ ). When comparing the pool of RadOnc residents to practicing physicians, there were no significant differences for Blacks and Hispanic, while Asians were increased (35.5% vs. 14.9%,  $p<0.0001$ ). Blacks and Hispanics were significantly underrepresented as RadOnc residents (3.4% and 7.2%, respectively) and practicing physicians (4.4% and 3.1%, respectively) and MedOnc fellows (3.7% and 7.4%, respectively) in comparison to the general population (12.6% and 16.3%, respectively), while Asians and Whites were proportionally increased (all  $P_s < 0.0001$ ).

**Conclusions:** Blacks and Hispanics are underrepresented in RadOnc at the residency and practicing physician levels compared to the overall population. Blacks remain underrepresented in the RadOnc resident trainee level when compared to their proportions as medical school graduates, suggesting that underrepresentation of these groups is not diminishing. Given existing cancer disparities and the potential to address them through diversification of the physician workforce, further research is needed to investigate whether these disparities simply represent different preferences in specialty choice, or other factors such as differences in exposure, selection, recruitment, mentorship, research, and/or real vs. perceived ability to successfully attain residency positions.