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Eyes across America: Distribution trends in US ophthalmology training

Abstract:

Our study investigates geographic distributions of Ophthalmology Residency Graduates (ORGs) across transitions from medical school to residency (T1), residency to fellowship (T2), and residency to their first role as attendings (T3).

Using publicly available alumni data on 800 US ORGs, we analyzed geographical trends and socioeconomic factors influencing trainee mobility. Average distances were compared using Welch Two-sample t-tests, differentiating between Top 50 NIH-funded medical school alumni (T50NIH) and others (nonT50NIH). We determined factors affecting travel distances using a linear regression model with US census data.

The South had the greatest retention of trainees in T1(70.9%), whereas the West had the greatest retention in T2(55.0%) and T3(68.75%). More ORGs traveled >500mi in T2(54%) compared to T1(39%) and T3(41%)($p<0.001$). T50NIH alumni traveled further on average than nonT50NIH in T1&T2($p<0.05$). In all transitions, ORGs moved to counties with lower smoking and obesity rates, higher median household incomes, and increased high school completion rates. ORGs traveled further if moving from counties with increased household incomes during T1&T2($p<0.01$) and rural residents during T2($p<0.05$). Conversely, ORGs travelled shorter distances if moving from counties with more college-educated residents during T2($p<0.05$) and elderly residents during T3($p<0.01$).

Overall, we see trainees gravitating toward affluent areas, while moving away from areas that contain populations with increased health risks. Aging demographics may be influencing ORGs to remain closer, while affordable housing within rural settings and higher household incomes may enable them to travel longer distances. These findings offer insight for administrators in Ophthalmology education and workforce planning to address regional disparities.

Biography

Brandon Garten completed his Bachelor of Science in Biology and a Minor in Nutritional Sciences at the University of Georgia. He is currently a 3rd year student at the Medical College of Georgia and is expected to graduate with an MD degree in 2026. He is interested in how nutrition influences disease development and has published research on the clinical applications of gut microbiome manipulation. He has served in various leadership positions for local youth organizations including Resilient Teens, a program designed to address adverse childhood experiences in Georgia's Central Savannah River Area.ss