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AAIM Perspectives

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Resident Recruitment Costs: A National Survey of Internal Medicine Program Directors

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Interest in Internal Medicine is declining nationally¹⁻³ and government funding to graduate medical education may be cut by health care reforms.⁴ Furthermore, new regulations requiring residency programs to either place all of their positions within the National Resident Matching Program (NRMP) or withdraw from the match entirely⁵ have raised concerns about increasing resources and effort necessary to recruit Internal Medicine residents, particularly for programs that have traditionally filled a portion of positions outside the match.⁶ Additionally, new duty hour restrictions,⁷ increasing resident workload,^{8,9} and the growing number of US medical school graduates¹⁰ may push some programs to expand their resident complement and allocate additional resources to resident recruitment.

In this era of declining resources and increasing regulation in graduate medical education, it is important to understand the annual cost associated with recruiting residents.⁴ This study provides a national “snapshot” of

interview day characteristics and estimates costs associated with recruitment among US Internal Medicine residency programs. By examining national recruitment practices, we hope to inform programs so that they can assess their recruitment strategies and make necessary adjustments in response to new policy changes.^{5,7}

METHODS

Survey of Program Directors

The Association of Program Directors in Internal Medicine surveyed 366 directors of its member programs in August 2009, which represented 96.3% of the 380 categorical Internal Medicine residency programs in the US and its territories.¹¹ Nine military-based and 4 unincorporated territory programs were excluded due to substantive differences in recruitment practices, leaving 353 programs eligible for this study. The survey was conducted electronically using a program-specific hyperlink to access the survey online. Nonresponders received subsequent e-mails with the hyperlink in September and October 2009. In November of 2009, the survey was closed.

The survey contained questions addressing recruitment processes, interview day components, and estimates of recruitment costs. First, program directors were asked to report the number of applications received, number of US medical school graduate applicants, number of applicants invited to interview, and number of

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applicants interviewed. Second, program directors were asked to state the number of interview days, to describe the components of the interview day (tour, meals, conferences, rounds, etc.), and to define the interview process (faculty panel, group interview, one-on-one interviews, program director interview). Thirdly, to ascertain an estimate of recruitment costs, program directors reported the amount of money spent during the 2008-2009 recruitment year on food, printing and supplies, hotel accommodations, and any other costs. Lastly, program directors estimated the percentage effort spent on recruitment by residency program personnel including the program director, associate program directors, chief residents, department of medicine chair, program administrators, and secretaries.

Estimation of Recruitment Costs

The total cost of recruitment was estimated as the sum of the 2008-2009 recruitment budget (spent on food, printing and supplies, hotels, etc.) and the percentage effort dedicated to recruitment by residency program personnel multiplied by national salary data for those personnel by job category. Program director salary was reported in the survey by program directors either as exact annual salary or annual salary category. If no salary data were reported, the median program director salary of the study sample was used. Associate program director salary was calculated using 2008 American Medical Group Association compensation and financial survey data for Internal Medicine physicians by region.¹² Regions within the US were defined using US Census Bureau definitions.¹³ Chief resident salary was calculated using program-specific postgraduate year (PGY)4 resident salary as reported by the American Medical Association Fellowship and Residency Electronic Interactive Database Access System Online (FREIDA).¹⁴ If PGY4 salary was not available for a specific residency program, the mean PGY4 salary by US Census Bureau region was used. Department of Medicine Chair salary was taken from the median salary reported by the 2008 Administrators of Internal Medicine and Association of Professors of Medicine survey.¹⁵ Program administrator salary was taken from the mean reported by the Associate Program Directors in Internal Medicine (APDIM) Program Administrators 2009 regional survey reports.¹⁶ Secretarial staff salary was calculated using the Bureau of

Labor Statistics annual mean medical secretary salary data by region.¹⁷

Additional program variables were collected using publicly available data. Programs were categorized as community based, university based, or community based university affiliated according to the FREIDA database.¹⁴ Board certification examination pass rate was obtained from the American Board of Internal Medicine (ABIM) 3-year program-specific running pass rate.¹⁸ Accreditation cycle length, government affiliations, number of approved positions, and number of filled positions were obtained from the Accreditation Council for Graduate Medical Education (ACGME) Web site.¹⁹ Program fill rate was calculated using NRMP 2009 match data by subtracting quota from matched positions.²⁰ Number of positions accepted outside the match was calculated by subtracting approved ACGME positions from the NRMP quota positions.

This study was approved by the Mayo Clinic Institutional Review Board.

Statistical Analyses

Cost data were summarized using median and interquartile range (IQR), while other variables were tabulated using count and percentage or mean and SD, as appropriate. Differences in interview day composition by program affiliation were assessed with odds ratios obtained from logistic regression models. Relationships between recruitment costs and program variables were examined using bivariate and multivariate quantile regression models for median total cost. Multivariate models were adjusted for size, region, program type, accreditation cycle length, government affiliation, presence of unfilled positions, ABIM rolling pass rate, percent volunteer faculty, and number of categorical PGY1 positions filled outside the NRMP match. A conservative alpha level of .01 was used to account for multiple comparisons. Analyses were conducted using SAS statistical software (version 9.3; SAS Institute Inc, Cary, NC).

RESULTS

Surveys were completed by 270 of 353 (76.5%) program directors. The geographic distribution, program type, accreditation cycle length, government affiliation, and presence of unfilled positions are shown in **Table 1** and are similar to those seen nationally.^{13,14,18,19}

PERSPECTIVES VIEWPOINTS

- Median total cost of recruitment per program was \$148,000.
- Largest determinate of cost was program size.
- Programs considering expanding can anticipate spending at least \$6000 per additional postgraduate year 1 (PGY1) position.
- About 25% of PGY1 positions were filled outside the match.
- If all 362 Internal Medicine programs went "all-in," this would add an estimated \$8.9 million to recruitment cost nationwide.

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