The Cost of Getting Into Orthopedic Residency: Analysis of Applicant Demographics, Expenditures, and the Value of Away Rotations

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OBJECTIVES: Little is known about the demographics and expenditures of applicants attempting to match into the competitive field of orthopedic surgery. In attempt to better inform potential applicants, the purposes of this work are to (1) better understand the demographics of successfully matched applicants, (2) determine the monetary cost of applying, and (3) assess the value of away rotations for improving chances of a successful match.

DESIGN: Prospective comparative survey.

SETTING: Mayo Clinic Department of Orthopedic Surgery, Rochester, MN.

PARTICIPANTS: A week following the 2015 Orthopedic Surgery Residency Match, a survey was sent to 1,091. The survey focused on applicant demographics, number of programs applied to, cost of applying, and the value of away rotations.

RESULTS: A total of 408 applicants completed the survey (response rate = 37%). Of these, 312 (76%) matched and 96 (24%) did not match into a US Orthopedic Surgery Residency. Of the matched applicants, 300 (96%) were from US allopathic medical schools, 9 (3%) US Osteopathic Schools, and 3 (1%) were international graduates. Males comprised 84% of these applicants whereas 16% were female. The mean number of programs applied to was 71 (range: 20-140). On average, applicants were offered 16 interviews (range: 1-53) and they attended 11 (range: 0-12). Completing a rotation at a program increased an applicant's chances of matching into that program by a factor of 1.5 (60% vs 40%). Of the applicants who matched, most applicants matched to an orthopedic residency in the same region where the applicant attended medical school (58%). The average cost of the application was $1,664 (range: $100-$5,000) whereas the cost of interviews (travel, food, etc.) was $3,656 (range: $15-$20,000). Total expenditures ranged from $450 to $25,000 (mean = $5,415). Over 8% of matched applicants spent > $10,000.

CONCLUSIONS: Gaining acceptance into orthopedic surgery residency remains a very competitive process. Away rotations appear to correlate strongly with match status; however, the process remains quite expensive for applicants. (J Surg Ed 73:886-891. © 2016 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: orthopedic surgery, residency application, medical students, cost

COMPETENCIES: Professionalism, Interpersonal and Communication Skills, Systems-Based Practice

INTRODUCTION

As with all medical specialties, resident selection is a key component to building a successful residency program in orthopedic surgery. Key factors used by orthopedic surgery program directors and faculty in this selection process include: medical school clerkship grades, United States Medical Licensing Examination scores, performance during orthopedic rotations, Alpha Omega Alpha Honor Medical Society Membership, class rank, letters of

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  1931-7204/$30.00 http://dx.doi.org/10.1016/j.jsurg.2016.04.003

recommendations, and performance on the interview day.[1-4] In recent years, orthopedic surgery has been one of the more competitive residencies sought by graduating medical students.[1,2,4,5] In the 2015 National Resident Matching Program (NRMP), there were a total of 1,062 applicants for 703 orthopedic surgery postgraduate year (PGY) 1 position (0.7 positions available per applicant).[5] All spots were filled and a total of 359 (34%) applicants went unmatched.[5] Although the number of positions offered are increasing annually, this is far outpaced by the increased rate of applications. From 2009 to 2013, the mean number of programs each US applicant applied to increased 27% (49-62).[6,7] Despite this, the annual unmatched rate remains high (approximately 38%).[5,8] As more and more students apply to orthopedic surgery and increase the competitiveness of the field, applicants are employing multiple strategies to improve their likelihood of gaining acceptance.

In addition to optimizing medical school grades, test scores, and rotation performance, applicants are increasingly completing research years during medical school, applying to more programs, and attending more away rotations to improve their chances of matching into a PGY1 position in orthopaedics.[1,5,9] Although these strategies may be effective in making applicants more competitive, they are not without cost. Medical students applying to more programs shoulder the increased cost of the application as well as attending the interview. The same is true for elective away rotations, which may require the applicant to pay for a separate application, associated travel, and housing during the clerkship. This trend of increasing applications and away rotations also has implications for program directors and faculty of residency programs. Although it may permit them to be more selective in their ranking processes, the high number of applications for rotations and residency positions require increased time for screening and review processes.

Although much is known about how applicants are making themselves more competitive for the residency selection process, little is known about how large of an effect these strategies have on the applicants themselves. Additionally, little is known about how effective these techniques are. The purpose of this work is to (1) provide a better understanding of the demographics of applicants who successfully match in to PGY1 positions in orthopedic surgery residency; (2) detail the financial expenditures of these applicants; and (3) determine the value of the away rotations in securing a residency position. Although beneficial to all stake holders in orthopedic education, this data can specifically be used to guide decision making and financial planning for applicants intending to apply to orthopedic surgery residency. To our knowledge, this study represents the first formal description of orthopedic surgery residency applicant demographics and expenses.

MATERIALS AND METHODS

Following approval from the Institutional Review Board, representatives from each of the participating study institutions (Mayo Clinic, Orlando Health, University of Iowa, or University of Southern California) discussed key variables relevant to the increasing number of applications that they receive at their program annually. Following this discussion, a final list of pertinent questions was assimilated and approved by all study members. This focused list was converted into an electronic survey using Qualtrics Software (Qualtrics, LLC, Provo, UT) by the Mayo Clinic Survey Research Center. This survey was disseminated via e-mail to 1,091 applicants who had applied for a PGY1 position at one or more of the 4 residency programs participating in the study through the NRMP for the 2015 Orthopedic Surgery Match. To reduce bias and duplicative responses, students applying to more than one of the study institutions were only sent a single survey. Each applicant was only allowed to respond to the survey a single time. Although 1,091 applicants initially applied to one or more of these programs, only 1,062 applicants completed their application for the 2015 PGY1 Orthopedic Surgery Match according to the NRMP.[5] This discrepancy could be the result of applicants not completing their applications, withdrawing from the match before match day, or not submitting a rank order list for orthopedic surgery after initially applying. The survey was sent to all applicants in the week following the 2015 NRMP match, and it remained open for a total of 3 months with reminders sent at monthly intervals to applicants that had not yet responded. All survey responses were collected in an anonymous and de-identified fashion. Although both unmatched and matched applicants were surveyed, the results were focused on those that successfully matched into a US allopathic orthopedic surgery PGY1 residency position.

The survey queried a multitude of applicant demographics such as number of programs applied to, match status, total cost of the application and interview process, and details regarding away rotations. Applicant demographics analyzed included type of medical school, region of medical school, and sex. Other key questions asked included number of interview invitations offered, interviews actually attended, and total number of away rotations. Additionally, applicants were asked if they matched where they rotated and how much money they spent on the application, interviews, and the process as a whole.

STATISTICAL ANALYSIS

Where appropriate, results are reported as percentages of the whole. Where variables are continuous and normally distributed, they are reported as means and medians (med) with ranges and standard deviations (SD) provided. When results of matched applicants were compared with