



AOA Critical Issues in Education

Differences in Fourth-Year Orthopaedic Away Rotation Opportunities and Fees Among Osteopathic and Allopathic Medical Students 1 Year After the Implementation of the Single Accreditation System

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Investigation performed at Northwell Health at Huntington Hospital, Huntington, New York.

Introduction: Fourth-year away rotations are well recognized as an important modifiable variable that has been shown to increase a student's opportunity to match into orthopaedic surgery. The purpose of this article was to determine whether allopathic (MD) and osteopathic (DO) medical students have equal opportunities for away rotations in terms of (1) eligibility and (2) fees associated with rotations after the single accreditation merger.

Methods: A cross-sectional study was performed during the 2021 application cycle (April to November) by reviewing all nonmilitary, Accreditation Council for Graduate Medical Education–accredited orthopaedic surgery programs ($n = 194$). Each program's website, affiliated school of medicine's website, and visiting student applications service portal were searched. Eligibility criteria for an away rotation and associated fees were recorded.

Results: Of the 194 programs, 18 (9.3%) of programs were found to have publicly published eligibility for away rotations that prohibited students based on applicant degree. Five (2.6%) programs/medical schools had fees that were larger for DO medical students compared with MD medical students ranging for \$50 to \$5,000. No programs/medical schools had larger fees for MD medical students compared with DO medical students.

Conclusions: Although DO and MD degrees are equivalent degrees for licensing and credentialing and graduate medical education has transitioned to a single accrediting body, there remained discord in the opportunities for fourth-year away rotations between osteopathic and allopathic medical students. This study highlights the necessity for greater reform, consistency, and transparency among orthopaedic surgery residency programs and their affiliated institutions.

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In June 2020, the Accreditation Council for Graduate Medical Education (ACGME) and American Osteopathic Association (AOA) concluded the merger of the 2 accrediting bodies forming a single accreditation entity for graduate medical education¹. The purpose of this merger was founded with the intent of creating nationwide standards and consistency in graduate medical education². Before the unification, one area of concern was how the merger of the 2 accrediting bodies could affect residency selection³. Preliminary studies have suggested notable changes for allopathic and osteopathic applicants, with more DOs going into primary care specialties⁴ and less into the more competitive surgical subspecialties^{5,6}.

Orthopaedic surgery is well recognized as one of the most competitive specialties for students to match⁷. In 2021, a total of 1,727 individual applicants submitted electronic residency application service applications for a total of 868 positions, of which 866 positions (99.8%) were filled through the national resident matching program's match^{8,9}. One area of criticism specific to the orthopaedic surgery matching process is the staggering amount of applicants applying to a large number of programs. According to the Association of American Medical College, orthopaedic surgery applicants applied to an average of 77 programs in 2021, which is higher than that of any other surgical subspecialty⁸. Reflectively, this has driven program directors and institutions to rely on objective measures such as standardized US Medical Licensing Examination Scores (USMLEs) and research productivity, as well as subjective measures such as 4th-year away rotations as screening tools^{2,10,11}.

Fourth-year away rotations are well recognized as one of the most important aspects into matching in orthopaedic surgery^{2,10,12-14}. In addition to the educational value of these rotations, both program directors and applicants use these rotations as a means of determining a "good-fit" between applicants and programs¹³. In the 2021 National Residency Matching Program's survey of program directors, an elective rotation at one's home institution had the second largest mean importance with respect to which candidates to interview¹⁵. This finding is consistent with previous studies that suggest that up to 57% of applicants match at their home or a program they rotated at and that an away rotation increased one's odds at matching at that institution by a factor of 1.5^{13,14}. This has led some to suggest that the number of away rotations should not be limited and should be encouraged¹⁰.

One area of interest is the impact of the single accreditation system on "away" rotations in orthopaedic surgery. Studies before the unification speculated on the impact of the single accreditation system, while also highlighting the lack of awareness regarding allopathic applicants being eligible for "away" rotations at osteopathic institutions and vice versa². Therefore, the purpose of this study was to determine what percentage of allopathic and osteopathic students would be deemed eligible for an away rotation at various institutions and whether there were associated cost differences between MD and DO applicants during and after the implementation of the single accreditation system.

Methods

A cross-sectional study was performed during the 2021 application cycle (April to November) to determine eligibility for away rotations based on applicant degree (osteopathic vs. allopathic). To perform this analysis, all 202 ACGME-approved residency programs were identified from the ACGME website¹⁶. Military orthopaedic surgery residency programs (n = 8) were excluded^{17,18}. A total of 194 orthopaedic surgery residency programs were reviewed in this study. Thirty-eight (19.6%) programs were AOA-accredited residencies before the single accreditation merger, and 156 (80.4%) programs were solely ACGME-accredited programs.

From the ACGME website, all program names and geographic locations were recorded. All residency programs were then searched through public source information, and information was recorded from a combination of program websites, affiliated medical school websites, as well as the centralized AAMCs' (655 K Street, NW, Suite 100 Washington, DC, 20001) Visiting Student Learning Opportunities student portal, formerly Visiting Service Application Service (655 K Street, NW, Suite 100 Washington, DC, 20,001). These sources were searched for eligibility criteria for an away rotation. Eligibility criteria and statements that would prohibit applicants based on degree (i.e., allopathic or osteopathic residents) from rotating were recorded. Examples of such statements would be as follows. The requirement of a medical student to have osteopathic training would prohibit allopathic students from rotating. Conversely, the requirement of students to be enrolled in a Liaison Committee on Medical Education (LCME)-accredited institution would restrict osteopathic students. International medical graduates were not evaluated in this study. Accrediting body of the program (i.e. ACGME or AOA) before the introduction of the single accreditation system was also recorded.

Programs were also searched for fees associated with away rotations. Fees including application or tuition fees were recorded from aforementioned sources and were categorized based on fee type.

Statistical Analysis was performed through STATA 14.0. Univariate analyses were performed with χ^2 tests for categorical data and 2-tailed *t* tests for continuous data. The *p* value of <0.05 was considered statistically significant. Descriptive statistics included mean values with SDs for continuous data and frequencies with proportions for categorical data.

Results

Eligibility

Overall, 18 (9.3%) of programs were found to have published eligibility requirements prohibiting students from applying for an away rotation based on applicant degree. Significantly more programs had eligibility requirements that prohibited osteopathic students (n = 16, 8.3%) from applying for an away rotation than programs which prohibited allopathic students (n = 2, 1.0%; *p* = 0.001). When stratifying all program's based on a residency program's pre-single accreditation status (i.e. AOA vs. ACGME), we found that 2 (5.9%) of the 38 previously AOA-accredited programs prohibited allopathic students, and 16 (10.3%) of the previous ACGME

programs prohibited osteopathic students from an away rotation. There was no statistical difference in the proportion of programs prohibiting students based on degree type when stratified based on accrediting status before the single accreditation merger ($p > 0.999$).

Of the 16 programs/medical schools that prohibited osteopathic students from applying for away rotations, all programs stated on their program or affiliated medical school website that only students from a Liaison Committee of Medical Education (LCME) medical school are permitted to rotate. In fact, one of these programs also stated that they cannot accept applications from osteopathic students. In addition, another program stated they prioritize students from LCME schools over others. All programs were historically ACGME-approved programs before the single accreditation merger.

Two programs had eligibility requirements that prohibited allopathic students from doing an away rotation. Both programs are historical AOA-approved residencies with osteopathic recognition and therefore state that they require additional training in osteopathic manipulation medicine.

Cost

Overall, there were 5 (2.6%) programs/affiliated medical schools that had differences in fees for an away rotation based on applicant degree. All 5 programs had higher fees for osteopathic students with costs ranging from \$50 to \$5,000 more than allopathic students. Based on fee type, 2 programs had higher application fees (\$50 and \$100), and the other 3 programs had tuition fees for non-LCME-accredited schools [(1) \$900 per week, (2) \$4,000 per rotation, and (3) \$5,000 per rotation]. No programs/medical schools had larger fees for allopathic medical students compared with osteopathic medical students.

Discussion

The merger of the ACGME and AOA bodies into a single accreditation system has raised concerns regarding its impact on residency selection and the application process in orthopaedic surgery². Coupled with the recent change of USMLE Step 1 becoming pass/fail¹⁹, fourth-year “away” rotations are undoubtedly one of, if not the most important modifiable variables to matching at a specific orthopaedic surgery residency program^{2,9,10,13,14}. However, as outlined in a recent *JAAOS* article², the downstream effects of the single accreditation merger have yet to be established. Therefore, the purpose of this study was to determine what percentage of allopathic and osteopathic students would be deemed eligible for an away rotation at various institutions. In this study, we found that although most institutions did not publicly publish eligibility criteria prohibiting students from applying for away rotation based on applicant degree, 18 (9.3%) programs have publicly published criteria that restricted rotations based on applicant degree. In addition, from a financial standpoint, 5 institutions have larger fees (either application or tuition fees) for osteopathic students for away rotations when compared with allopathic students. Although most programs in the single accreditation system offered equal opportunities based on applicant degree, there

remained a number of programs who treated allopathic and osteopathic applicants differently.

Although there have been several studies evaluating the variables associated with matching into orthopaedic surgery, the importance of fourth-year away rotations has clearly been established^{2,9,10,12,13,20}. Many critics of the single accreditation system voiced concerns regarding the unknown downstream effects, especially with respect to residency selection and away rotations^{2,3}. In this study, we found that during the second application cycle after the completion of the single accreditation system, most programs did not have publicly published criteria that prohibited the rotation of students based on applicant degree. However, we also found that there is a subset of programs and their affiliated institutions that have public criteria restricting away rotations based on applicant degree. Although, proportionally, more institutions restricted osteopathic students from applying for away rotations, when stratified based on pre-accreditation status (i.e., ACGME or AOA), a similar number of institutions restrict applicants from applying for rotations. This suggests that some programs or institutions have yet to adopt the principles behind a single accreditation system.

One of the major criticisms of the residency application and selection process has been the fees and costs associated with the process^{10,21,22}. As a whole, in 2021, 73% of medical students graduated with education debt at an average of more than \$200,000²³. Although the transition to virtual interviews in response to the severe acute respiratory syndrome coronavirus 2 pandemic has significantly reduced the burden of the application process, there remains a significant cost burden to students²². Historically, the interview process alone has cost applicants an average of \$5,000 to 7,000 and even up to \$20,000^{14,21}. One area of concern some authors have suggested is that students may consider applying for more away rotations because of the transition to the pass/fail USMLE scoring²⁰. Inevitably, this could further drive up the cost of the away rotations. Because of the substantial cost burden of the residency application process, increased costs could be seen as an indirect means of dissuading applicants from applying. In this study, we found that 5 (2.6%) programs/institutions have differing fees for away rotations based on applicant degree. We found that 2 institutions had higher application fees for osteopathic students (\$50 and \$100), and 3 programs charged tuition fees for non-LCME-accredited schools (up to \$5,000). No programs/medical schools had larger fees for allopathic medical students compared with osteopathic medical students.

This study is not without limitations. First, this study consisted of a search of publicly accessible information and is highly reliant on programs as well as affiliated medical schools keeping their eligibility and associated fees up to date on their websites and other publicly available domains. Although the data may be somewhat inconsistent, it is important to note that this is part of the information available and searchable for prospective applicants and should be updated regularly. Second, an important caveat of this study is that it is founded on publicly available information and institutions may rely on nonpublic criteria to determine who they allow to do a rotation. In the National Match Residency Program’s 2021 Program

Director Survey, 55% of programs use a standardized screen to reject applicants from residency interviews⁹. It is possible that institutions may rely on similar nonpublic screening tools for away rotations. Third, it is important to note that the data collected in this study came from a multitude of sources including residency program websites and affiliated medical school websites. Therefore, residency programs or affiliated medical schools alone may not be accountable for the findings of this study. However, this highlights the need for residency programs and their home institutions to actively engage in conversations that dictate administrative policies for away rotations. Fourth, it is important to note that policies such as allowing certain applicants with various degrees to perform away rotations are not static, and as such, the findings of this study may not fully represent the current state of away rotations. Further studies will be needed to determine whether these findings will change as time goes on.

Conclusion

Despite the transition to a single accreditation system, there remains differences in away rotation opportunities and costs for allopathic and osteopathic medical students. This study highlights the need for greater reform and transparency

between orthopaedic surgery residency programs and affiliated institutions. ■

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