

# Analysis of Internal Dermatology Matches Following the COVID-19 Pandemic

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## PRACTICE POINTS

- Following the COVID-19 pandemic, affiliation with a home program is even more impactful in successful application to dermatology residency. Applicants from institutions without dermatology programs should consider completing additional externships.
- The high rate of applicants matching to the same regions as their home programs is due to several factors. Applicants may have a larger social support system near their home institution. Additionally, programs are more comfortable matching applicants within their own regions.

Dermatology has long been recognized as a highly competitive field within medicine, with extremely limited spots available for aspiring dermatologists to secure residencies across the United States. We sought to evaluate the trends and factors influencing the match process in dermatology residencies, particularly given the changes brought on by the COVID-19 pandemic. Using data from publicly available match lists and regional categorizations, we studied the rates of internal and regional matches for dermatology applicants in the postpandemic era (2022-2023) compared with prepandemic statistics. Overall, the research sheds light on the evolving dynamics of dermatology residency matching in response to pandemic-induced changes and applicant preferences.

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Dermatology residencies continue to be among the most competitive, with only 66% of seniors in US medical schools (MD programs) successfully matching to a dermatology residency in 2023, according to the National Resident Matching Program. In 2023, there were 141 dermatology residency programs accepting applications, with a total of 499 positions offered. Of 578 medical school senior applicants, 384 of those applicants successfully matched. In contrast, of the 79 senior applicants from osteopathic medical schools, only 34 successfully matched, according to the National Resident Matching Program. A higher number of students match to either their home institution or an institution at which they completed an away (external) rotation, likely because faculty members are more comfortable matching future residents with whom they have worked because of greater familiarity with these applicants, and because applicants are more comfortable with programs familiar to them.<sup>1</sup>

Prior to the COVID-19 pandemic, the Association of Professors of Dermatology published an official statement discouraging programs from offering in-person external electives to applicants in the 2020-2021 cycle. As the pandemic progressed, this evolved: for the 2021-2022 cycle, applicants were encouraged to complete only 1 away rotation, and for the 2022-2023 cycle, applicants were encouraged to complete up to 3 away rotations.<sup>2</sup> This most recent recommendation reflects applicant experience before

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the pandemic, with some students having a personal connection to up to 4 programs, including their home and away programs.

A cross-sectional study published in early 2023 analyzed internal matches prior to and until the second year of the pandemic. The prepandemic rate of internal matches—applicants who matched at their home programs—was 26.7%. This rate increased to 40.3% in the 2020-2021 cycle and was 33.5% in the 2021-2022 cycle.<sup>2,3</sup> The increase in internal matches is likely multifactorial, including the emergence of virtual interviews, the addition of program and geographic signals, and the regulation of away rotations. Notably, the rate of internal matches inversely correlates with the number of external programs to which students have connections.

We conducted a cross-sectional study to analyze the rates of internal and regional dermatology matches in the post-COVID-19 pandemic era (2022-2023) vs prepandemic and pandemic rates.

## Methods

Data were obtained from publicly available online match lists from 65 US medical schools that detailed programs where dermatology applicants matched. The data reflected the postpandemic residency application cycle (2022-2023). These data were then compared to previous match rates for the prepandemic (2020-2021) and pandemic (2021-2022) application cycles. Medical schools without corresponding dermatology residency programs were excluded from the study. Regions were determined using the Association of American Medical Colleges Residency Explorer tool. The Northeast region included schools from Vermont; Pennsylvania; New Hampshire; New Jersey; Rhode Island; Maryland; Massachusetts; New York; Connecticut; and Washington, DC. The Southern region included schools from Florida, Georgia, Kentucky, Louisiana, Arkansas, North Carolina, Alabama, South Carolina, Mississippi, Tennessee, Texas, Oklahoma, and Virginia. The Western region included schools from Oregon, New Mexico,

Utah, Colorado, Arizona, Washington, and California. The Central region included schools from Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, and Nebraska. The data collected included the number of applicants who matched into dermatology, the number of applicants who matched at their home institutions, and the regions in which applicants matched. Rates of matching were calculated as percentages, and Pearson  $\chi^2$  tests were used to compare internal and regional match rates between different time periods.

## Results

Results for the 2022-2023 residency cycle are summarized in the Table. Of 210 matches, 80 (38.10%) of the applicants matched at their home institution. In prepandemic cycles, 26.7% of applicants matched at their home institutions, which increased to 38.1% after the pandemic ( $P=.028$ ). During the pandemic, 40.3% of applicants matched at their home institutions ( $P=.827$ ).<sup>2</sup> One hundred forty-nine of 210 (70.95%) applicants matched in the same region as their home institutions. The Western region had the highest rate of both internal matches (47.06%) and same-region matches (76.47%). However, the Central and Northeast regions were a close second (43.55% for home matches and 75.81% for same-region matches) and third (42.31% for home matches and 75.00% for same-region matches) for both rates, respectively. The Southern region had the lowest rates overall, with 29.11% for home matches and 63.29% for same-region matches.

## Comment

The changes to the match process resulting from the COVID-19 pandemic have had a profound impact on match outcomes since 2020. During the first year of the pandemic, internal matches increased to 40%; during the second year, the rate decreased to 33%.<sup>2</sup> The difference between the current postpandemic internal match rate of 38.1% and the prepandemic internal match rate of 26.7% was statistically significant ( $P=.028$ ). Conversely, the

### Applicants Matching Into Dermatology Residency Programs in the 2022-2023 Cycle

Region	Total applicants in the region matched, n	Total applicants matched at home institution, n	Total applicants matched in the same region as their home institution, n	Rate of home matches, %	Rate of same-region matches, %
Central	62	27	47	43.55	75.81
Northeast	52	22	39	42.31	75.00
Southern	79	23	50	29.11	63.29
Western	17	8	13	47.06	76.47
Total	210	80	149	38.1	70.95

difference between the postpandemic internal match rate and the pandemic internal match rate was not significant ( $P=.827$ ). These findings suggest that pandemic trends have continued despite the return to multiple away rotations for students, perhaps suggesting that virtual interviews, which have been maintained at most programs despite the end of the pandemic, may be the driving force behind the increased home match rate. During the second year of the pandemic, there were greater odds (odds ratio, 2.3) of a dermatology program matching at least 1 internal applicant vs the years prior to 2020.<sup>4</sup>

The prepandemic regional match rate was 61.6% and increased to 67.5% during the pandemic.<sup>3</sup> Following the pandemic, 70.95% of applicants matched in the same region as their home program. A study completed in 2022 using the Texas Seeking Transparency in Application to Residency database found that there was no difference in the percentage of applicants who had a geographic connection to their program when comparing the 2021 cycle to 2018-2020 cycles.<sup>5</sup> Frequently, applicants prefer to stay within their regions due to social factors. Although applicants can again travel for external rotations, the regional match rate has stayed relatively constant before and after the pandemic, though it has trended upward throughout the latest application cycles.

During the 2022-2023 cycle, applicants were able to send preference signals to 3 programs. A survey reflecting the 2021-2022 cycle showed that 21.1% of applicants who sent a preference signal to a program were interviewed by that program, whereas only 3.7% of applicants who did not send a preference signal were interviewed. Furthermore, 19% of matched applicants sent a preference signal to the program at which they ultimately matched.<sup>6</sup> Survey respondents included 40 accredited dermatology residency programs who reported an average of 506 applications per program. Preference signals were developed to allow applicants to connect with programs at which they were not able to rotate. It is unclear how preference signals are affecting internal or regional match rates, but similar to virtual interviewing, they may be contributing to the higher rates of internal matching.

This study is limited in the number of programs with match data publicly available for analysis. Additionally, there were no official data on how many students match

at programs at which they completed external rotations. Furthermore, these data do not include reapplicants or osteopathic applicants who match within their regions. Importantly, all US medical schools were not represented in these data. Many programs, specifically in the Western region, did not have publicly available match lists. Self-reported match lists were not included in this study to avoid discrepancies. Regional rates reported here may not be representative of actual regional rates, as there were more applicants and internal matches in each region than were included in this study.

## Conclusion

Although applicants were able to participate in external rotations as of the last 2 application cycles, there was still an increase in the rate of internal dermatology matches during the 2022-2023 cycle. This trend suggests an underlying disadvantage in matching for students without a home program. For the 2023-2024 cycle, applicants are recommended to complete up to 2 external rotations and may consider up to 3 if they do not have a home program. This recommended limitation in external rotations aims to allow students without a home program to develop connections with more programs.

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