



Commentary

## Surgical Sub-specialties and the Match: The Ongoing Impact of a Global Pandemic

Lauren M Sinik, Katie G Egan and James Butterworth\*

Department of Plastic Surgery, University of Kansas Medical Center, Kansas City, USA

Since the publication of our original research article titled “Effect of COVID-19 Restrictions on 2021 Integrated Plastic Surgery Match Outcomes” in the *Journal of Surgical Education*, COVID-19 has continued to be a present force and seems likely at this point to become endemic. Concerning trends noted in the 2021 integrated plastic surgery match included increased home program match rates, decreased match rates of students who did not come from a medical school affiliated with a plastic surgery program, and decreased match rates of students who did not come from a Top 40 US News and World Report medical school [1]. Although further research on the effects of these trends is needed, the potential exists for decreases in diversity of trainee backgrounds. As we work to adjust to a new normal, we were pleased that many medical schools this year allowed students to resume one visiting subinternships, in-line with guiding recommendations of the Coalition for Physician Accountability, Association of American Medical Colleges, and the American Council of Academic Plastic Surgeons [2,3].

Several groups subsequently published similar studies following the 2021 Match, both within plastic surgery and in other specialties including urology, dermatology, otolaryngology, and neurosurgery. These specialties are generally regarded as competitive and historically have seen a high proportion of students participating in away rotations and subinternships during the residency application season. Interestingly, however, not all subspecialties saw the same increase in medical students matching at home institutions that was seen in plastic surgery after the 2021 Match.

Multiple studies within the field of plastic surgery affirmed our findings that with changes to interview structures and eliminating

**\*Corresponding author:** James Butterworth, Department of Plastic Surgery, University of Kansas Medical Center, Kansas City, USA, Tel: +1 9135882000; E-mail: jbutterworth@kumc.edu

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away subinternships for those with access to a home plastic surgery program, rates of medical students matching at home institutions were significantly higher [4-6]. Utilizing publicly available spreadsheets to determine match data as well as National Residency Matching Program (NRMP) data revealed similar trends within the field of otolaryngology, with a statistically significant increase in students matching at their home program in 2021 compared to the 2019 and 2020 application cycles [5,7]. Another group analyzed otolaryngology match specifically utilizing the Texas Seeking Transparency in Applications to Residency (Texas STAR) database, and found no difference in the presence of a medical student’s geographic connection to the program at which they matched in the 2021 match year compared to 2018-2020 match years [8]. Dermatology also experienced an increase in home program matches in 2021 when compared to a sample of students from 2007-2018 [9]. The likelihood of staying in a geographic region was unchanged [9].

Urology and neurosurgery matches did not appear to exhibit the same trend, and had no statistically significant difference in home match rates in 2021 [5,10,11]. A quantitative mapping study of urology match outcomes also found no difference in the median distance between medical school and residency, undergraduate university and residency, or home state and residency, suggesting no change in match rates at an institution where a student has a geographical connection [11]. Neurosurgery programs similarly saw no change in percentage of home matches in 2021 compared to an aggregate data set of match years 2017-2020 [10]. However, programs with a higher Doximity ranking were more likely to match home students compared to lower ranked programs [10]. This suggests that while there was no overall change in home matches, there may have been a disproportionate impact of away rotation restrictions at some institutions when compared to others. Program directors have reported concerns that virtual formats disproportionately disadvantage students from less prestigious schools.<sup>12</sup> Additionally, lack of financial burden of interviews may allow a small number of applicants to monopolize interview spots at the majority of programs, as interview caps do not currently exist [12-14].

Although the results of home program match rates varied between these highly competitive specialties, the question of institutional diversity and effects on match rates remains largely unanswered and shows concerning trends in the data that has been reported from COVID-19 era matches. We anticipate that trends may change in the 2022 match cycle, as visiting subinternships have had at least a partial resumption for most students seeking these opportunities. Interviews are likely to remain virtual for this match cycle, and it will be of interest to evaluate these individual impacts on match trends.

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