



Virtual Is the New Reality: How Are We Matching Up Postpandemic?

Dan Pfeifle, M.D., Brent Bagley, M.D., W. Graham Carlos, M.D.

Division of Pulmonary, Critical Care, and Sleep Medicine, Department of Medicine, Indiana University School of Medicine, Indianapolis, Indiana

While our patients were losing their breath, our colleagues were holding theirs as we witnessed the impact of the coronavirus disease (COVID-19) pandemic on intensivist burnout (1), staffing shortages (2), and subsequent fellowship match rates.

The gateway to practicing pulmonary and critical care medicine (PCCM) involves the Electronic Residency Application Service (ERAS) and National Resident Matching Program (NRMP). These programs had consistently showed increasing interest in PCCM among applicants prepandemic (3), but the onset of the COVID-19 pandemic brought significant change to the interview process.

Evidence of the direct effects of the pandemic on pulmonary and critical care fellowship match rates is now emerging. In this issue of *ATS Scholar*, two articles are presented on the impact of the pandemic and virtual interviewing on the PCCM fellowship match (4, 5).

Strumpf and colleagues utilized longitudinal data from the ERAS and the NRMP to compare applicant pools for pulmonary and critical care fellowships prepandemic (2017–2020) and during the

pandemic (2021–2022) to assess the impact of the virtual interview. They utilized unadjusted linear models to estimate meaningful changes in the number of fellowship positions, the number of applicants, and the percentage of matched applicants. They also used linear regressions to identify associations between covariates and the number of programs to which the applicant applied.

The number of positions noted available for pulmonary critical care fellowships increased each year over this period; however, the number of additional applicants entering the match each year was twice the number of positions available, resulting in a decrease in the percentage of applicants matching.

The pandemic years even outpaced the prepandemic years in number of applicants and number of positions. The rate of successful matches decreased over time, but the rate of matching within similar regions and at an applicant's home institution remained similar, without significant changes reported (4).

Alzghoul and colleagues used NRMP and ERAS data in their analysis to assess the

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impact of the virtual interview as well. Their analysis examined similar prepandemic years, although they used only the data from 2021 for comparison of the virtual interview format. They utilized chi-square analysis to compare match rates across specified subgroups—U.S. doctors of medicine, U.S. doctors of osteopathic medicine (U.S. DOs), and international medical graduate applicants—as well as by reported sex (male, female). *P* values were calculated to determine the significance of associations. They also noted the increased number of applicants and similar total filled positions across these years. As a group, U.S. doctors of medicine were noted to have a decreasing number of applicants and number of filled positions, although their match rate remained similar across this period. However, US DOs had a significant increase in number of matched individuals. Although the number of matched individuals did not significantly change, the probability of matching at an applicant's first choice significantly decreased, with a significant increase in matching at a program lower than their third choice. This was most notable after the implementation of a virtual interview format (5).

The limitations of the studies were similar, given the use of multiple datasets from different organizations, which limits granularity to assess unsuccessful matches. Both studies did not include critical care medicine–only fellowships: This exclusion impacts an accurate assessment of all interest in critical care practice while also potentially accounting for some individuals who were unsuccessful in their preferred match of pulmonary and critical care fellowship. Furthermore, only internal medicine residents were included as applicants, which leaves out applicants from

combined medicine–pediatrics programs and practicing physicians returning to fellowship. Finally, other nonmatch-associated factors that may impact local decisions regarding applying for fellowship cannot be determined.

We are left with cause for optimism and cause for concern as we embrace the age of the virtual interview postpandemic. Optimistically, we note that there appears to be stability with respect to programs being able to fill their fellowship spots; this is reassuring, given the ongoing need for pulmonary and critical care medicine training to fulfill projected shortages (6). In addition, applicants are saving money by avoiding travel fees; given the average cost of medical education debt of \$200,000 (7), this is certainly an important consideration (8). This also has allowed applicants to apply more broadly and find programs that best align with their interests. It may also contribute to the increases in US DOs and international medical graduate applications seen postpandemic (9).

Although applications are increasing (10), the number of available fellowship spots is not increasing proportionally. We need to continue to advocate for this to preserve our physician workforce in PCCM. Another cause for concern involves the geographic location and rank list position of programs of matched applicants. Strumpf and colleagues noted minimal change in the number of applicants matching within the same region and same program in the prepandemic and pandemic years, but the rank list position for successful matches appears to have fallen, as shown by Alzghoul and colleagues (4, 5). This could be interpreted in a few ways:

1. The number of applicants has increased over time, as has the number of applications per applicant. With an increase in the

number of applications per position, it is natural that not all applicants will match in their number-one spot, let alone within their top three.

2. Programs may be placing less emphasis on the interview than in past years. As the virtual interview format has impacts on how applicants are perceived, programs may place less emphasis on this part of the overall application. Some applicants may be less affected by the change from in-person to virtual interviews, whereas others who would have matched higher on their rank list with the benefit of an in-person interview may no longer see this benefit.
3. Applicants may be more strategic with their rank list and start ranking programs besides their own higher on their rank list, even if their expected match is their home institution. With their only in-person

experience being that with their home institution, they may view this match as “safer,” leading to searching for more competitive fellowship spots at other institutions.

The impact of matching at a program an applicant had ranked lower is unclear but deserves future analysis. As pulmonary and critical care fellowship recruitment continues, careful consideration of the impacts of the virtual interview such as this is welcomed. We hope to read discussions of this soon in future issues of the *ATS Scholar*.

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