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POINT: Should Fellowship Interviews Remain Exclusively Virtual? Yes

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The coronavirus pandemic has impacted medical education in myriad ways, including a move to virtual residency and fellowship recruitment and interviews. In May 2020, the Coalition for Physician Accountability, an umbrella organization comprised of representatives from a dozen groups that include the Accreditation Council for Graduate Medical Education and the National Residency Matching Program (NRMP), released recommendations to address pandemic-related effects on medical education.¹ They recommended (1) discouraging away rotations, (2) virtual interviews for all applicants, (3) a delayed opening of the Electronic Residency Application Service for programs, and (4) transparency and clear communication among stakeholders. The Association of Pulmonary and Critical Care Medicine Program Directors provided resources and educational offerings to assist Pulmonary and Critical Care Medicine (PCCM) fellowship program leaders with a swift transition to a virtual interview season.² Although new and unfamiliar to both applicants and program leaders alike, the transition to virtual interviews highlighted the many unnecessary costs of in-person interviews: financial costs to programs and applicants, opportunity costs for applicants, and

downstream effects on program diversity and the environment.

Financial Costs

The financial costs of in-person fellowship interviews are variable depending on the number of applications and interviews and geographic variability of applied programs. A literature review of the historical costs of surgical residency and fellowship interviews revealed mean or median costs of \$4,000 to \$7,180 per applicant with a range of \$450 to \$25,000, with most costs attributed to transportation and lodging.³ The number of applications by applicant for PCCM fellowship has been increasing steadily since 2016 (Fig 1). In 2021, candidates for a Doctor of Medicine degree applied to an average of 34 PCCM programs; candidates for a Doctor of Osteopathic Medicine degree applied to an average of 49 programs, and international medical graduates applied to an average of 67 programs.⁴ Costs of in-person interviews include application fees (based on number of programs applied to), US Medical Licensing Examination transcript fees, transportation, lodging, food during travel, and NRMP registration fees. A shift to virtual interviews takes away all costs aside from the fixed costs of application, US Medical Licensing Examination transcript, and NRMP fees. Consider a hypothetical applicant applying to 40 programs and interviewing at 12 geographically separated programs who might spend \$7,000 in total for in-person interviewing. Removing travel-related costs would result in approximately \$6,000 saved; notably, this is approximately 10% of the salary of a third-year medical resident.

Program costs are also variable but generally include the price of a venue, food and beverages for a applicant dinner or happy hour with current trainees, and breakfast and lunch on the interview day. Many programs also have staff escort applicants to and from faculty interviewers; this personnel time is a cost that is more difficult to quantify. Programs that provide applicants with token gifts, such as pens or tote bags with program branding, may incur additional costs.

Opportunity Costs

In economics, opportunity cost refers to the loss of a benefit that could have been enjoyed when an alternative choice is made. What is this cost for applicants who spend weeks travelling around the country for in-person

ABBREVIATIONS: NRMP = National Residency Matching Program; PCCM = Pulmonary and Critical Care Medicine; VI = virtual interviews

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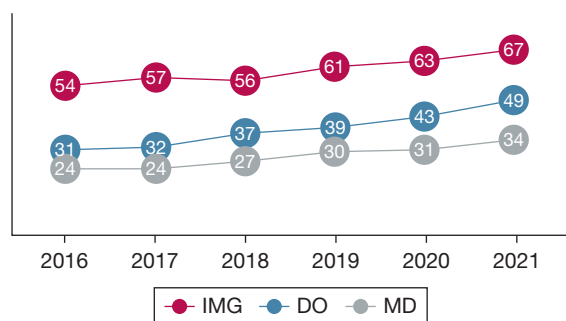


Figure 1 – Average number of applications by applicant for the pulmonary and critical care medicine fellowship program by year. DO = Doctor of Osteopathic Medicine; IMG = International Medical Graduate; MD = Doctor of Medicine; PCCM = Pulmonary and Critical Care Medicine.

interviews? Travel for in-person interviews means time away from clinical rotations and from family and friends during a busy time in medical training. For applicants at residency programs with limited professional leave, residents may have to use vacation, sick, or unpaid leave to travel for necessary interviews. The burden of travel may also prove onerous for applicants with disabilities or those who are pregnant. One applicant to gastroenterology fellowship shares her experiences on the interview trail while 7 to 8 months pregnant, describing the challenges of attending seven interviews in three time zones in an 11-day period.⁵ A move to virtual interviews considerably shortens the fellowship interview season by removing travel time and allows applicants to participate in interviews from the comfort of their own home.

Diversity Costs

As programs strive to recruit a diverse and inclusive workforce, the costs of in-person interviews may be prohibitive for applicants from diverse socioeconomic backgrounds. The Accreditation Council for Graduate Medical Education has highlighted the importance of diversity by requiring that all programs “engage in practices that focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce.”⁶ Results from the Matriculating Student Questionnaire completed annually by incoming medical students reveal that 25% of current medical students report parental incomes in the bottom 60% of US households.⁷ Travel costs may limit applicants with limited financial resources from applying broadly to training programs, a loss for applicants and programs alike. Although virtual interviews can introduce new sources of bias and amplify known biases, there are

strategies to mitigate these biases by addressing structural and technologic sources of bias.⁸

Environmental Costs

Finally, there are clear costs to the environment to continue in-person interviews. The CO₂ produced from a single 2,500-mile flight (eg, from New York City to Los Angeles) shrinks the Arctic summer sea ice cover by 32 square feet.⁹ Donahue et al¹⁰ documented the carbon footprint associated with travel to residency interviews of graduating medical students at the University of Michigan and found that they travelled to an average of 14.4 programs. By extrapolating the results of their study to the 18,925 US medical students participating in the 2019 Match, they found that interview travel resulted in 51,665 metric tons of CO₂ emissions per year, which is equivalent to the amount of CO₂ produced by 11,162 passenger cars in 1 year. The cumulative environmental impact of annual travel for fellowship programs is staggering.

Additional Benefits to Virtual Interviews

In addition to avoidance of the downsides of in-person interviews, virtual interviews offer unique benefits. For programs with multiple clinical sites, faculty from all sites can participate in the interview process, which allows for better matching of applicants with faculty with similar clinical and/or research interests. Virtual recruitment also allows programs to develop a “brand” and share their mission, vision, and values more intentionally with prospective applicants.¹¹ To guide program leaders on how to approach virtual interviews, a multidisciplinary task force comprised of trainees and program leaders at the University of California at San Francisco reviewed existing literature about virtual interviews to determine best practices; their recommendations are shown in Table 1.¹²

Conclusions

As with many other aspects of medical education, the coronavirus pandemic has forced programs to consider new approaches to fellowship recruitment and interviews. Although the move to virtual interviews in 2020 was born out of necessity, it appears to be a viable, and perhaps more attractive alternative to an in-person interview system that is antiquated and costly across several domains. In-person interviews result in significant financial, opportunity, diversity, and environmental costs and limit flexibility in matching applicants with faculty interviewers. The onus is now on programs to develop

TABLE 1] Recommended Strategies for Virtual Interviews^a

Recommendation	Notes
Develop a detailed process for interviews	Test virtual platform in advance
	Have a plan for technology failure
	Consider composition of interview team
	Consider 1-day format vs staggered interviews
	Build in breaks to avoid video fatigue
Use standardized interview questions	Clarify policy for subsequent in-person visits
	Improve the utility and accuracy of interviews
	Reduce risk of asking prohibited questions
Recognize and respond to biases amplified by virtual interview format	Use the Association of American Medical Colleges guidance and examples
	Consider bias about physical characteristics, home environment, or technology access
Prepare current trainees	Require implicit bias training, ensure diverse recruitment teams, and evaluate applicants holistically
	Consider loaning computers and/or providing interview rooms
	Offer mock virtual interviews
Develop electronic materials and virtual social events	Leverage alumni networks to help trainees connect with alumni at other programs
	Recreate critical components of the interview day virtually
	Offer virtual events with current trainees
Collect data about virtual interviews	Consider a dedicated question and answer session to address sensitive topics
	Track number of applicants and consider number of interviews offered
	Evaluate changes in the applicant pool over time

^aAdapted with permission from Huppert LA et al.¹²

virtual recruitment and interview processes and practices that reflect their program culture, to minimize bias, and to attract diverse applicants.

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