

A Game of Adaptability: Reflecting on the Highlights & Challenges of Applying for Surgical Residency During the COVID-19 Pandemic

Boateng Kubi, B.S.¹, James Keiler, B.S.², Anthony Douglas II, B.A.³

1. Johns Hopkins University School of Medicine, Baltimore, MD
2. University of Virginia School of Medicine, Charlottesville, VA
3. Indiana University School of Medicine, Indianapolis, IN

Corresponding Author:

Boateng Kubi, B.S
Johns Hopkins Hospital
1800 Orleans St
Baltimore, MD 21287
Tel: 301-364-7176
Email: bkubi1@jhmi.edu

Disclosures: The authors report no proprietary or commercial interest in any product mentioned or concept discussed in this article.

INTRODUCTION

After the Association of Medical Colleges (AAMC) recommended that all residency interviews transition to a virtual format, programs and applicants across the country embarked on a journey that would require incredible flexibility, patience, and grace. For surgical applicants, many of whom will spend a minimum of 5 years in their new homes, this selection of a residency program would have to come without the in-person interactions that have historically been the most important deciding factor for candidates.^{1,2} To support creative efforts to maintain the integrity of the match, Butler et al. published important recommendations for programs and candidates during virtual surgery residency selection.³ In support of these efforts, the authors write this perspective to reflect upon the highlights and challenges that arose through this virtual application cycle, and propose potential directions for the future.

THE HIGHLIGHTS

For many students around the country, the financial burden of applying into residency can invoke great anxiety. A 2017 analysis revealed that a single in-person interview costs candidates between \$250-\$499 on average, with about 13% of candidates spending more than \$7500 on the interview process alone.⁴ While the costs associated with virtual interviewing

should not be ignored, we want to acknowledge the relatively minimal cost as a major highlight of this virtual cycle. Beyond this financial feasibility, virtual interviews afforded substantial time and resource savings for candidates. A virtual interview session typically lasts about half a day, allowing for less time off from the clinical rotations and fewer interruptions to other academic commitments during the interview season.

The virtual format allowed surgical candidates to schedule interviews at programs without having to account for travel time between different cities. The effects of this were two-sided. On one hand, more competitive candidates were less likely to turn down interview offers, creating a serious maldistribution of interview and rank opportunities on a population level. However, from the individual applicant perspective, the ability to assess two programs on back-to-back days in a way that was historically prohibited by in-person travel limitations was a significant advantage during this application cycle.

Characterizing a program involves understanding its current residents, faculty, and recent alumni. A major highlight of this interview cycle was the significant efforts that programs undertook to re-model websites, create day-in-the-life-of-a-resident videos, provide virtual hospital tours, and summarize the unique aspects of their program on social media. Because websites served as the primary reference for students before and after virtual interview day, many surgical programs made considerable efforts to keep their websites updated with photos and descriptions of trainees. This virtual application cycle also allowed students to interact with a greater number of participating faculty during interview day, as they could join remotely.

THE CHALLENGES

We recognize the multitude of benefits that the virtual interview format conferred and will comment here on the challenges associated with this cycle. Virtual interviews require an appropriate interviewing environment, stable internet connection, and familiarity with the various interviewing platforms utilized by programs. Applicants were encouraged to purchase new audiovisual equipment (cameras, microphones, ethernet cables, laptops) and find locations suitable and quiet for interviewing.⁵ However, this was less feasible for some applicants, particularly those from low socioeconomic backgrounds. If unable to establish a secure connection, applicants risked losing valuable time during the interview and their inefficiency being misconstrued as disinterest in a program or lack of preparation.

The in-person interview provides an opportunity to observe organic interactions between residents and faculty, tour hospital facilities, and experience the culture of the program and city one may train in. To simulate this in-person experience, applicants scrutinized program websites, scoured social media, attended webinars, and solicited one-on-one conversations with residents/faculty. Unfortunately, these efforts are limited in their ability to convey culture, assess fit, and evaluate authenticity of in-program relationships.

Another unique challenge that arose this year was that of “zoom fatigue.”⁶ A recent NIH study found that respondents reported shorter attention spans, decreased engagement, and decreased quality of discussions in zoom meetings compared to face-to-face interactions.⁷ As the interview season progressed, it became increasingly difficult to sustain a high level of enthusiasm and engagement in pre-interview zoom mixers and interviews. The aforementioned ability to schedule serial interviews at programs across the country sometimes translated to attending the pre-interview social for a program just hours after concluding a separate interview.

Finally, in-person interviews historically provided a medium for co-applicants to initiate personal and professional relationships that would grow within and across institutions. Meeting and interacting with future colleagues on the interview trail is an aspect of the application process historically appreciated by candidates, and one that was sorely missed during this year’s cycle.

RECOMMENDATIONS

Surgical programs and applicants proved to be adaptable amidst the COVID-19 pandemic. Upon reflecting on the highlights and challenges observed during this year’s cycle, the authors recommend a hybrid approach for future cycles: virtual interviews with subsequent optional, in-person visit days for candidates.

The value of in-person interactions should not go understated; however, the financial relief of virtual interviews cannot be ignored. In the virtual setting, surgical programs should continue to invite candidates to partake in informational webinars, grand rounds conferences, and browse updated websites. After the virtual interview day, programs should offer 1-2 dates for interested candidates to attend an in-person visit that includes activities traditionally central to the interview experience - facility/city tours, resident and faculty socials, and program dinners. There are several advantages to this proposed hybrid model, with the most significant being the decreased overall cost to applicants who would now be able to self-select programs to visit. Concurrently, programs would maintain the ability to showcase intangibles that are difficult to display in virtual forums; and time spent away from clinical duties is minimized.

This combination of virtual and in-person interactions is not without its challenges. Firstly, the need for high-quality audiovisual equipment and appropriate interview spaces will remain. To address this, medical schools should offer need-based vouchers for audiovisual equipment and allocate interview-friendly spaces within the school of medicine for students. Furthermore, to help guard against potential sources of bias, we suggest that programs standardize digital backgrounds during virtual interviews: candidates should either use plain backgrounds or adapt standard digital backgrounds provided by programs for interested students.

Economically disadvantaged candidates may be less likely to partake in open house invitations compared to students of higher socioeconomic status, providing well-resourced

students an advantage in the selection process. As one potential solution to this challenge, we recommend programs provide travel vouchers for qualified economically disadvantaged students (i.e. Pell-grant eligible, etc). Major surgical societies can also aid disadvantaged applicants by offering travel and lodging stipends to be utilized for in-person visits. It is our viewpoint that financial assistance provided for costs associated with virtual interviewing should be shouldered by candidates' home institution. Financial assistance for costs associated with in-person visits should be shouldered by training programs as part of the recruitment process.

An important limitation to this model is the potential for program bias towards applicants who attend in-person visits. To prevent this, the authors recommend that in-person visit days have absolutely no bearing on a program's rank order list (ROL); it should be maintained as a dedicated day for candidates to garner more data for their own ROL. The National Resident Matching Program (NRMP) currently specifies in their "Match Communication Code of Conduct" that post-interview visits should have no bearing on that institution's ROL.⁸ Adherence to this can only be ensured by submission of program ROLs ahead of the first open house. However, recognizing that this may be an unrealistic expectation, applicants must accept the risk that choosing not to attend a program's open house could be perceived as disinterest. To help combat this limitation, it is critical that neutral organizations like the Association of Program Directors in Surgery, the American College of Surgeons, and the Association of Academic Surgery, strongly recommend non-evaluative in-person visits.

To address the challenge of zoom fatigue, the authors recommend that programs send interview day presentations to candidates ahead of time and allot time on interview day to answer persisting questions. Including scheduled breaks, this should limit the average interview day to a maximum of 5 hours. Notably, this hybrid process would not address the maldistribution of interviews to highly competitive applicants unless surgical programs increase the number of interviews offered. Strong applicants would likely continue to accept the initial virtual interview but decline the open house invitation after further consideration.

As surgical programs deliberate on whether to maintain the virtual interview format, the authors advocate for consideration of the role socioeconomic factors play in an applicant's ability to shine on interview day. Furthermore, surgical programs should consider that maintaining an entirely virtual format can hinder their overall goal of conveying the collegial nature of the program and satisfaction of current residents with the training provided. As our field strives to perfect this process, the authors are confident that surgical programs will continue to be malleable and creative in the recruitment of future surgeons in our society.

REFERENCES

1. Huntington WP, Haines N, Patt JC. What factors influence applicants' rankings of orthopaedic surgery residency programs in the national resident matching program? *Clin Orthop Relat Res.* 2014;472(9):2859-2866. doi: 10.1007/s11999-014-3692-9 [doi].
2. Stefanidis D, Miles WS, Greene FL. Factors influencing residency choice of general surgery applicants--how important is the availability of a skills curriculum? *J Surg Educ.* 2009;66(6):325-329. doi: 10.1016/j.jsurg.2009.06.004 [doi].
3. Butler PD, Nagler A A Division of Education, American College of Surgeons, Atala A, et al. Virtual surgery residency selection: Strategies for programs and candidates. *Am J Surg.* 2021;221(1):59-61. doi: S0002-9610(20)30480-3 [pii].
4. Fogel HA, Liskutin TE, Wu K, Nystrom L, Martin B, Schiff A. The economic burden of residency interviews on applicants. *Iowa Orthop J.* 2018;38:9-15.
5. Jones RE, Abdelfattah KR. Virtual Interviews in the Era of COVID-19: A Primer for Applicants. *Journal of Surgical Education.* 2020;77(4):733-734.
doi:10.1016/j.jsurg.2020.03.020
6. Wiederhold BK. Connecting Through Technology During the Coronavirus Disease 2019 Pandemic: Avoiding "Zoom Fatigue." *Cyberpsychology, Behavior, and Social Networking.* 2020;23(7):437-438. doi:10.1089/cyber.2020.29188.bkw
7. NIH Center for Scientific Review, 2020. Impact of Zoom Format on CSR Review Meetings. [online] Available at: <<https://public.csr.nih.gov/sites/default/files/2020->

10/CSR%20Analysis%20of%20Zoom%20in%20Review%20Oct%202020.pdf>.

Accessed 11 April 2021.

8. National Resident Matching Program. Match Communication Code of Conduct.

Available at: <<https://www.nrmp.org/communication-code-of-conduct/>>. Accessed 11 May 2021.

ACCEPTED