

UC Irvine

UC Irvine Previously Published Works

Title

Applicant Perspectives of Virtual General Surgery Residency Interviews

Permalink

<https://escholarship.org/uc/item/3qh5z4dj>

Journal

The American Surgeon, 88(10)

ISSN

0003-1348

Authors

Finney, Nicole
Stopenski, Stephen
Smith, Brian R

Publication Date

2022-10-01

DOI


10.1177/00031348221103658

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Applicant Perspectives of Virtual General Surgery Residency Interviews

The American Surgeon
2022, Vol. 88(10) 2556–2560
© The Author(s) 2022
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/00031348221103658
journals.sagepub.com/home/asu


Nicole Finney, MPH¹ , Stephen Stopenski, MD¹, and Brian R. Smith, MD¹

Abstract

Background: The coronavirus 2019 (COVID-19) pandemic prompted drastic changes to residency recruitment. The majority of general surgery residency interviews for the 2020-2021 interview cycle were restructured into a virtual format. The goal of this study is to evaluate general surgery residency applicants' perception of virtual interviews.

Methods: A secure, anonymous, web-based survey was developed, tested, and distributed via email to all candidates who applied to the University of California Irvine general surgery residency program for Match 2021.

Results: 1239 general surgery applicants were invited after Match Day 2021 to take the survey, and 167 (13.5%) completed the survey and were included in the final analysis. Applicants received and accepted a median of 10 (Interquartile range [IQR], 5-18) and 9 (IQR, 5-15) interviews. Using a Likert scale, candidates revealed they were most satisfied with introduction and program overview (72.5%) and interactions with faculty (70.6%). Applicants were dissatisfied with pre-interview socials (66.9%) and hospital tours (66.2%). When evaluating programs, they had the most difficulty discerning program culture and resident autonomy. Most applicants (54%) were satisfied with the virtual format and 52% believed that virtual format should continue.

Discussion: The majority of applicants were satisfied with virtual interviews and could foresee the format continuing in the future.

Keywords

general surgery, residency interview, virtual interview, MATCH

Introduction

The coronavirus 2019 (COVID-19) pandemic prompted drastic changes to medical education and residency recruitment. To adjust to the new norm of social distancing, the majority of general surgery residency interviews for the 2020-2021 interview cycle (Match 2021) were restructured into a virtual format. Residency programs and applicants alike found themselves quickly adapting to innovative methods utilizing telecommunication. Although video interviewing has previously been used in medicine and business,¹ 2020 marked a drastic shift in paradigm away from the traditional in-person interview.

Few previous studies have evaluated replacing in-person residency interviews.²⁻⁴ Potential benefits emphasize significant cost reduction and less time spent traveling. However, potential disadvantages exist for candidates, including an inability to assess program culture or properly present themselves.^{4,5} Studies prior to the pandemic concluded virtual interviews could be used as a screening tool or adjunct to in-person interviews.^{4,6}

The recent, drastic changes to the match process offer an opportunity to evaluate applicants' virtual experiences.

The goal of this study is to gauge perspectives of general surgery residency applicants about virtual interviews using a cross-sectional survey. Moving forward, program directors and applicants will need a qualitative assessment of applicants' perspectives. As residency programs begin to make decisions regarding the continued use of virtual interviews, this study can aid in making informed, data-driven decisions for future match cycles.

¹Department of Surgery, University of California Irvine, Orange, CA, USA

Corresponding Author:

Brian R. Smith, MD, Department of Surgery, University of California, Irvine Medical Center, 333 The City Blvd West, Suite 1600, Orange, CA, USA.

Email: Smithbr@hs.uci.edu

Methods

Survey Creation

A secure, anonymous survey was developed utilizing Qualtrics (Provo, UT, USA). A draft of the survey was developed by the primary investigators based. The survey was then reviewed and revised by two independent academic surgeons. The questions were then tested on a small sample of medical students to assess for comprehension and interpretation. The study was deemed exempt by the Institutional Review Board (IRB) at the University of California Irvine and verbal informed consent was waived.

The survey consisted of 22 questions and required approximately 5-10 minutes to complete. Demographic data collected included age, gender, and site of medical school graduation (United States vs International). Additionally, we collected the number of general surgery programs applied to, number of interviews received/accepted, reasons for declining interview offers, and limiting factors while applying for or scheduling interviews. Candidates were asked to comment on financial and time commitments during the interview season. The remaining questions focused on their overall virtual interview experience and their ability to assess residency programs as a whole.

Survey Dissemination and Analysis

The survey was disseminated via email with an anonymous link to the web-based survey on March 23, 2021. All candidates who applied to the University of California Irvine for a general surgery residency position were invited to participate, and there was no monetary reimbursement. The survey was closed April 20, 2021. Descriptive summary statistics were tabulated using Qualtrics (Provo, UT, USA).

Results

Applicant Characteristics

In total, 1239 general surgery applicants were invited to take the survey and 216 (17.4%) agreed to participate in the study. Of these, 167 (77.3%) completed the survey and their responses were included in final analysis. The survey respondent characteristics are shown in Table 1, where the median age was 27 and 46.3% were male. The majority (59.3%) applied to over 70 general surgery residency programs. Only 44 (26.3%) of the applicants participated in an away rotation before interviewing. The 2021 Match candidates received and accepted a median of 10 (Interquartile range [IQR], 5-18) and 9 (IQR, 5-15) interviews, respectively. The number of interviews accepted ranged

Table 1. General Surgery Match 2021 Applicant Survey Characteristics.

Characteristic	Applicants (N = 167)
Median age (IQR)	27 (2)
Male (%)	76 (46.3)
Medical school	
US medical school (%)	118 (70.7)
International medical graduate (%)	49 (29.3)
Residency programs applied to	
Only applied to general surgery (%)	120 (71.9)
Applied to multiple specialties (%)	37 (22.2)
Applied for preliminary position only (%)	10 (5.9)
Number of general surgery programs applied to (%)	
Less than 40 (%)	23 (13.8)
41-70 (%)	45 (26.9)
More than 70 (%)	99 (59.3)
Participated in an away rotation	44 (26.3)
Number of interviewers received, median (IQR)	10 (13)
Number of interviews attended, median (IQR)	9 (10)

IQR = Interquartile range.

from 1-40 with 21 (12.6%) candidates accepting 20 or more interviews.

Cost and Time Commitment of Virtual Interviewing

The total expense of the 2021 general surgery match varied greatly between respondents with a median of \$1200 (IQR, \$150-\$3000). There were 38 (22.8%) applicants that spent less than \$100 on their interviews, and the majority (54.5%) thought the interview process was inexpensive (Table 2). Regarding time away from medical school dedicated to interviewing, 64 (38.3%) did not require any time off.

Virtual Interview Experience and Assessment of Residency Programs

The Match 2021 applicant perspectives on virtual interviews is shown in Figure 1. Applicants were most satisfied with the introduction/overview of the program by the program director (72.5%), interactions with faculty (70.6%), and the overall organization of the interview day (66.8%). However, applicants were dissatisfied with tour of the hospital/campus (67.4%) and pre-interview socials (43.1%). In total, 90 (54.2%) of applicants were overall satisfied with the transition to a virtual format. The applicants' ability to evaluate and gauge the general surgery residency program is shown in Figure 2. Applicants were most satisfied gauging program camaraderie (58.4%).

Table 2. Survey Respondents Interview Cost and Time Off From Medical School for Match 2021.

	Candidates (N = 167)
Total cost of interviews, No (%)	
≤\$100	38 (22.8)
\$101 - \$1000	44 (26.3)
\$1001 - \$5000	73 (43.7)
>\$5000	12 (7.2)
Applicants' perspective on total expense, No (%)	
Inexpensive	91 (54.5)
Appropriately expensive	26 (15.6)
Too expensive	50 (29.9)
Time spent dedicated to interviewing, No (%)	
None	64 (38.3)
1-4 weeks	55 (32.9)
5-8 weeks	35 (21.0)
>8 weeks	13 (7.8)

Applicants were most dissatisfied trying to gauge program culture (31.9%). When asked about the future of the virtual format, 26 (15.6%) believed the all-virtual format should continue but 87 (52.1%) thought the virtual format would benefit from an additional in-person component or option.

Discussion

The general surgery match is an important process for applicants and programs alike. Where a student decides to continue their training has profound implications on their career and life; simultaneously, residency program directors constantly seek new residents who are a good fit for their program. This general surgery 2021 Match survey evaluated applicants' perspectives on the virtual interview format to determine their overall satisfaction. Surgical programs and applicants across the country had to adjust to the changing paradigm. In general, the majority of applicants were satisfied with virtual interviews. While most applicants can foresee this format continuing in the future, this study revealed that interviewees' ability to gauge resident autonomy and program culture was limited.

One promising benefit of virtual interviews is the potential to relieve the enormous cost historically affiliated with the residency interview process. This financial burden has been well-documented.^{7,8} We found that a significant number of applicants still rated the process as "extremely expensive." Conversely, a large portion rated the process as "extremely inexpensive," and nearly a quarter (22.8%) of applicants spent \$100 or less. The bimodality could be due to many factors including, but not limited to, expectation of cost, financial support, and availability of interview attire. Virtual interviews cut

down on costs related to travel (flights, hotels, meals, etc.) but do not reduce other associated expenses such as application fees, interview preparation, and attire.

In addition to monetary cost, virtual interviews also decrease time spent away from the clinical environment of medical school. The fourth-year of medical school is designed to provide flexibility for interviews, however many students still do not feel they have enough time off.⁹ Virtual interviews minimize time away from clinical responsibilities, while also maximizing the number of interviews applicants are able to attend. With more time at medical school, students can devote more time developing clinical skills and competencies many residency program directors expect at entry to residency.^{10,11}

The average number of applications submitted per candidate in the 2021 Match was higher than previous years.¹² If the current trend holds, applicants will apply to an increased number of programs each year.¹³ With virtual interviews, candidates found themselves able to attend more interviews than past years, and concerns over "interview hoarding" arose.^{14,15} Interview limits based on probability of matching per number of interviews were proposed to combat the uneven distribution of interview offers. Citing diminishing returns in matching probability^{13,16,17} and the demonstrated tendency of programs to compete for the same small pool of applicants,^{18,19} arguments for capping the number of interviews held by each applicant are gaining traction. Rajesh and Asaad, 2021 argue that the general surgery interview cap should be at 15-17, given 17 interviews provide a 100% matching probability, 13 interviews a 95% matching probability, and 11 interviews a 90% matching probability.¹⁴ While not implemented in Match 2021, there may be some merit to these recommendations as both the median number of interviews received and attended were less than the lower limit of the proposed cap in this study.

Prior studies investigating a virtual platform to replace traditional interviews have yielded positive results.^{1,3-6,20} However, most concluded that a virtual component should be used adjunctly to in-person opportunities.⁴⁻⁶ Our results support these findings, with the majority of survey respondents foreseeing a virtual format with an option for an in-person component. This would allow programs to hold smaller, more personalized visits with their potential candidates. Likewise, it could limit the amount of travel necessary for the candidates. The addition of an in-person component may assuage applicants' reported difficulties in assessing resident autonomy and social aspects, such as camaraderie and program culture.

This study has multiple limitations, including those inherent to cross-sectional survey studies. The data interpretation is limited by the 17.4% response rate. Additionally, response bias and recall bias are possible. The survey was disseminated after Match Day to encourage

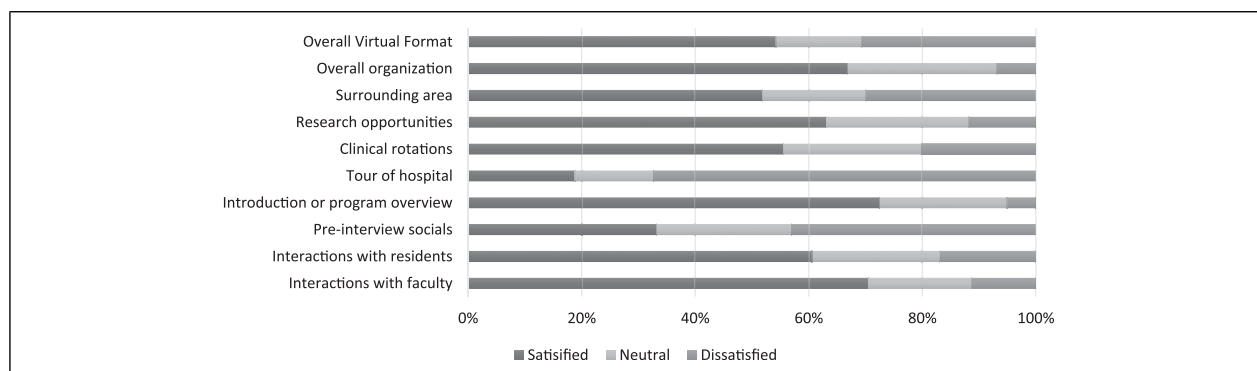


Figure 1. Match 2021 applicant perspectives on their virtual interview experience.

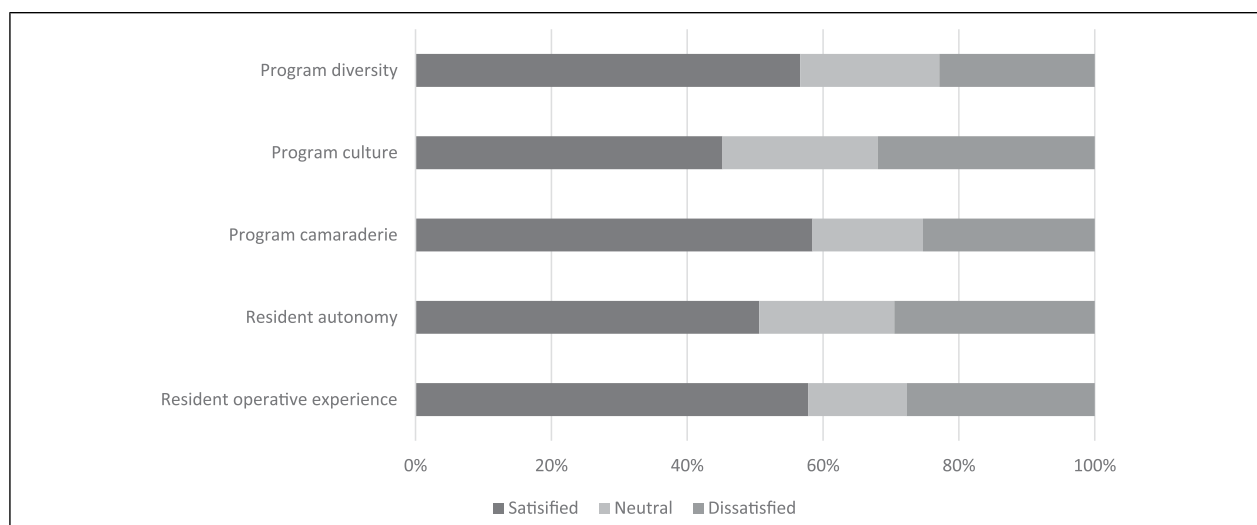


Figure 2. Match 2021 applicants' ability to gauge general surgery residency programs during their virtual interview.

respondents' honest answers without fear of impacting their match prospects.

Virtual interviewing for the residency match became a necessity in the era of COVID-19. Its continued use will need further evaluation in the near future. Our results suggest that virtual interviewing is, in general, positively received amongst applicants, although the addition of an in-person component should be strongly considered.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Nicole Finney  <https://orcid.org/0000-0002-2366-3726>

References

1. Breitkopf DM, Green IC, Hopkins MR, Torbenson VE, Camp CL, Turner NSI 3rd. Use of asynchronous video interviews for selecting obstetric and gynecology residents. *Obstet Gynecol*; 2019;134:9S-15S. doi:10.1097/AOG.0000000000003432
2. Liman JP, Miller M. Use of videoconferencing for residency interviews. *Acad Med*. 2000;75(8):777.
3. Pasadhika S, Altenbernd T, Ober RR, Harvey EM, Miller JM. Residency interview video conferencing. *Ophthalmology*. 2012;119(2):426-426.e5. doi:10.1016/j.ophtha.2011.09.032
4. Shah Satyan K, Arora S, Betty S, Summers K, Craig TT, Smith Anthony Y. Randomized evaluation of a web based

- interview process for urology resident selection. *J Urol.* 2012;187(4):1380-1384. doi:10.1016/j.juro.2011.11.108
5. Chandler NM, Litz CN, Chang HL, Danielson PD. Efficacy of videoconference interviews in the pediatric surgery match. *J Surg Educ.* 2019;76(2):420-426. doi:10.1016/j.jsurg.2018.08.010
 6. Edje L, Miller C, Kiefer J, Oram D. Using skype as an alternative for residency selection interviews. *J Grad Med Educ.* 2013;5(3):503-505. doi:10.4300/JGME-D-12-00152.1
 7. 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.
 8. Agarwal N, Choi PA, Okonkwo DO, Barrow DL, Friedlander RM. Financial burden associated with the residency match in neurological surgery. *J Neurosurg.* 2017;126(1):184-190. doi:10.3171/2015.12.JNS15488
 9. Benson NM, Stickle TR, Raszka WVJ. Going "Fourth" from medical school: Fourth-year medical students' perspectives on the fourth year of medical school. *Acad Med.* 2015;90(10):1386-1393. doi:10.1097/ACM.0000000000000802
 10. Langdale LA, Schaad D, Wipf J, Marshall S, Vontver L, Scott CS. Preparing graduates for the first year of residency: are medical schools meeting the need? *Acad Med.* 2003;78(1):39-44. doi:10.1097/00001888-200301000-00009
 11. Lyss-Lerman P, Teherani A, Aagaard E, Loeser H, Cooke M, Harper GM. What training is needed in the fourth year of medical school? Views of residency program directors. *Acad Med.* 2009;84(7):823-829. doi:10.1097/ACM.0b013e3181a82426
 12. *Preliminary data (ERAS 2021).* AAMC; 2021. <https://www.aamc.org/data-reports/interactive-data/eras-statistics-data>. Accessed 12 January 2022.
 13. Weissbart SJ, Kim SJ, Feinn RS, Stock JA. Relationship between the number of residency applications and the yearly match rate: Time to start thinking about an application limit? *J Grad Med Educ.* 2015;7(1):81-85. doi:10.4300/JGME-D-14-00270.1
 14. Rajesh A, Asaad M. Alternative strategies for evaluating general surgery residency applicants and an interview limit for MATCH 2021: An impending necessity. *Ann Surg.* 2021;273(1):109-111. doi:10.1097/SLA.0000000000004501
 15. Kasle DA, Torabi SJ, Izreig S, Rahmati RW, Manes RP. COVID-19's impact on the 2020-2021 resident match: A survey of otolaryngology program directors. *Ann Otol Rhinol Laryngol.* 2021;130(7):666-673. doi:10.1177/0003489420967045. Published online October 22, 2020.
 16. National Resident Matching Program. *Charting Outcomes in the Match: U.S. Allopathic Seniors; 2018.* <https://www.nrmp.org/wp-content/uploads/2018/06/Charting-Outcomes-in-the-Match-2018-Seniors.pdf>. Accessed August 2, 2021.
 17. National Resident Matching Program. *Charting Outcomes in the Match: Senior Students of U.S. Osteopathic Medical Schools; 2018.* <https://mk0nrmp3oyqui6wqfm.kinstacdn.com/wp-content/uploads/2018/06/Charting-Outcomes-in-the-Match-2018-Osteo.pdf>. Accessed August 2, 2021.
 18. Lee AH, Young P, Liao R, Yi PH, Reh D, Best SR. I dream of Gini: Quantifying inequality in otolaryngology residency interviews. *Laryngoscope.* 2019;129(3):627-633. doi:10.1002/lary.27521
 19. Morgan HK, Winkel AF, Standiford T, et al. The case for capping residency interviews. *J Surg Educ.* 2021;78(3):755-762. doi:10.1016/j.jsurg.2020.08.033
 20. Williams K, Kling JM, Labonte HR, Blair JE. Videoconference interviewing: Tips for success. *J Grad Med Educ.* 2015;7(3):331-333. doi:10.4300/JGME-D-14-00507.1