Applicant Perspectives of Virtual General Surgery Residency Interviews

Nicole Finney, MPH, Stephen Stopenski, MD, and Brian R. Smith, MD

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, 2020 marked a drastic shift in paradigm away from the traditional in-person interview.

Few previous studies have evaluated replacing in-person residency interviews. 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. Studies prior to the pandemic concluded virtual interviews could be used as a screening tool or adjunct to in-person interviews.

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.

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

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

IQR = Interquartile range.

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%).
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. 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. 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.

The average number of applications submitted per candidate in the 2021 Match was higher than previous years. If the current trend holds, applicants will apply to an increased number of programs each year. With virtual interviews, candidates found themselves able to attend more interviews than past years, and concerns over “interview hoarding” arose. 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 and the demonstrated tendency of programs to compete for the same small pool of applicants, 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. 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. However, most concluded that a virtual component should be used adjuctly to in-person opportunities. 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

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

<table>
<thead>
<tr>
<th>Candidate (N = 167)</th>
<th>Total cost of interviews, No (%)</th>
<th>Applicants’ perspective on total expense, No (%)</th>
<th>Time spent dedicated to interviewing, No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤$100</td>
<td>Inexpensive</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>$101 - $1000</td>
<td>Appropriately expensive</td>
<td>1-4 weeks</td>
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<tr>
<td></td>
<td>&gt;$5000</td>
<td>Too expensive</td>
<td>5-8 weeks</td>
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<td></td>
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</tbody>
</table>

#### Total cost of interviews, No (%)

- ≤$100: 38 (22.8)
- $101 - $1000: 44 (26.3)
- >$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)
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

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