Interviewing In A Pandemic:
A Survey of Radiology Residency Applicants Following the 2020-2021 Virtual Interview Season

Matthew Mader, MD[1]; Kelli Andresen, MD[1]; Lauren Clark, MS[2]; Carissa Walter, MPH[1]
[1]University of Kansas Medical Center, Department of Radiology
[2]University of Kansas Medical Center, Department of Biostatistics and Data Science

THE UNIVERSITY OF KANSAS HEALTH SYSTEM

Purpose

As a public health policy response to the **COVID-19 pandemic**, the American Association for Medical Colleges strongly encouraged universal transition to a **virtual interview** setting for the **2020-2021 residency application cycle** (AAMC, 2020). The consequences of this transition on the application process and match outcomes are unknown.

Considering the financial and temporal constraints of traditional travel interviews, the virtual format may allow applicants to cast a wider net. Conversely, a surge in applications suggests increased competition for limited interview slots (Hammoud, et al., 2020). It is uncertain whether the ostensible limitations of virtual interviews may introduce applicant bias to the ranking of home versus external programs.

Methods and Materials

A questionnaire was tailored to characterize the impact of the virtual interview process. Following NRMP Match Week, the questionnaire was distributed to our institution's radiology residency program applicants. Responses were anonymous.

Demographic information, application statistics, expenses, online resources used, as well as perceptions of the virtual interview format were evaluated. Likert scale responses were provided to assess factors influencing the application and ranking process.

Table 1: Demographics of Respondents

Sex	N (%)	Type of Degree	N (%)
Female	8 (17%)	US MD	40 (83%)
Male	37 (79%)	US DO	6 (13%)
Decline to answer	2 (4%)	International graduate	2 (4%)

Race	N (%)	Region of Medical School	N (%)
Asian/Pacific Islander	11 (23%)	Northeast	1 (2%)
Black	1 (2%)	South	11 (23%)
White	32 (68%)	Central/Midwest	32 (67%)
Decline to answer	3 (6%)	West	2 (4%)
		International	2 (4%)

Table 2: Application and Interview Statistics

How many radiology programs did you apply to?	N (%)	How many days did you spend interviewing?	N (%)
16-25	1 (2%)	<5 days	6 (13%)
26-50	21 (44%)	5-10 days	5 (10%)
>50	26 (54%)	>10 days	37 (77%)

How many interview invitations did you receive?	N (%)	How much money did you spend on interviews?	N (%)
<5	1 (2%)	$101-500	2 (4%)
5-10	5 (10%)	$501-1000	7 (15%)
11-15	15 (31%)	$1001-1500	13 (27%)
>15	27 (56%)	$1501-2000	6 (13%)
		$2001-2500	5 (10%)
How many interviews did you participate in?	N (%)	$2501-3000	8 (17%)
<5	1 (2%)	$3001-3500	1 (2%)
5-10	6 (13%)	$3501-4000	3 (6%)
11-15	22 (46%)	$4501-5000	2 (4%)
>15	19 (40%)	$>$5000	1 (2%)

Table 3: Perception of Virtual Interview vs. Match Rank Preference

		Did you rank your home program above all external programs?			
		Yes, N=13	No, N=35	Total, N=48	P-value
Inadequate interaction with current trainees during interview	Very Important/ Important, N (Column %)	6 (46%)	23 (66%)	29 (60%)	0.4927*
	Neutral/ Less Important/ Not Important, N (Column %)	6 (46%)	12 (34%)	18 (38%)	
Inadequate interaction with faculty during interview	Very Important/ Important, N (Column %)	3 (23%)	20 (57%)	23 (48%)	**0.0358****
	Neutral/ Less Important/ Not Important, N (Column %)	10 (77%)	15 (43%)	25 (52%)	
Unable to participate in lecture/didactics	Very Important/ Important, N (Column %)	1 (8%)	6 (17%)	7 (15%)	0.6561*
	Neutral/ Less Important/ Not Important, N (Column %)	12 (92%)	29 (83%)	41 (85%)	
Unable to see hospital/facilities	Very Important/ Important, N (Column %)	10 (77%)	21 (60%)	31 (65%)	0.3296*
	Neutral/ Less Important/ Not Important, N (Column %)	3 (23%)	14 (40%)	17 (35%)	
Unable to visit the city	Very Important/ Important, N (Column %)	11 (85%)	24 (69%)	35 (73%)	0.2663*
	Neutral/ Less Important/ Not Important, N (Column %)	2 (15%)	11 (31%)	13 (27%)	
Unable to witness the faculty/trainee interaction	Very Important/ Important, N (Column %)	11 (85%)	25 (71%)	36 (75%)	0.4686*
	Neutral/ Less Important/ Not Important, N (Column %)	2 (15%)	10 (29%)	12 (25%)	

* Since the expected count in more than 20% of the cells is less than 5, a Fisher's Exact Test was used. Participants who responded "NA" were excluded from the calculation for p-values for that item.
** Chi-Square test used

Results

245 Match participants were invited to complete the survey, yielding **48 complete responses**. Demographics are detailed in Table 1. Application, interview, and expense statistics are summarized in Table 2.

In preparation for interviews, most respondents reported visiting official program websites (N=38, 79%). Many also visited online forums and databases, including Reddit (N=32, 67%), AMA-FREIDA (N=24, 50%), and Doximity (N=23, 48%). Program location was identified as a key factor in rank selection, with 96% (N=46) of respondents citing this as important or very important.

A major question of our study was whether the transition to virtual interviews made a significant impact on preferences and match outcomes. Chi-squared or Fisher's exact tests were conducted to compare two groups: those who ranked their home program highest (N=13) versus those who ranked an external program over their home program (N=35). Results are presented in Table 3.

Conclusions

Small sample size, sampling bias, and self-selection/volunteer bias limit the power of our study, with 48 respondents out of a total pool of 1657 diagnostic radiology applicants in this year's Match (NRMP, 2021).

The results of this survey support three conclusions.

First, the virtual format **reduces the financial burden** of interviews. All respondents identified saving on cost of travel as an advantage of virtual interviews. Most respondents (N=41, 85%) spent $3000 or less on interviews, compared to an average of $4552 reported in previous literature (Fried, 2015).

Second, the virtual interview process likely results in **increased competition**. Validating the speculations of Hammoud et al., many respondents reported *applying to more programs* because of the virtual format (N=23, 48%), most citing concerns for increased competition. Over half of respondents applied to greater than 50 programs (N=26, 54%), compared to a 4-year average of 44.8 applications per applicant from 2017-2020 (ERAS, 2020). Half of respondents (N=24, 50%) reported *accepting/attending more interviews* than they would have under normal conditions, with the majority attributing this to decreased cost and time constraints.

Finally, perhaps the most nuanced conclusion we derive from the data: perceived limitations of the **virtual format largely did not affect home versus external program rank selection**.

As previously mentioned, **location was an important factor** for most applicants. Most respondents agreed that being unable to visit the city (N=35, 73%) and campus (N=31, 65%) was a substantial limitation in evaluating external programs. However, this perception did not correlate with match rank preference for home or external program (see Table 3).

Overall, half of respondents thought that the virtual format might *hurt their chances at matching to an external program* (N=24, 50%). The remaining respondents thought that the virtual format had *no effect on their candidacy* (N=18, 38%) or even *may help them match externally* (N=6, 13%). One's estimation of this impact was independent of final rank preference for home or external programs (p-value 0.1806), suggesting these **concerns did not ultimately alter their decisions**.

There was only one significant correlation between perceived virtual interview limitations and rank selection of home vs external programs: those that reported ranking external programs over their home program were more likely to identify **inadequate interaction with faculty** as a key limitation of the virtual interview. Had the converse been true (i.e., if home program rank bias were associated with this criticism) one might suggest that perceived limitations affected rank choice. It is inherently apparent that this constraint did not dissuade this group from prioritizing an external program in their rank list; however, our survey did not determine whether it affected their specific choice of external program.

References

1. **AAMC. (2020).** *Conducting Interviews During the Coronavirus Pandemic*. Retrieved from Association of American Medical Colleges (AAMC): https://www.aamc.org/what-we-do/mission-areas/medical-education/conducting-interviews-during-coronavirus-pandemic
2. **ERAS. (2020).** *ERAS Statistics*. Retrieved from Association of American Medical Colleges: https://www.aamc.org/data-reports/interactive-data/eras-statistics-data
3. **Fried, J. G. (2015, May).** *Association of American Medical Colleges (AAMC)*. Retrieved from Cost of Applying to Residency : https://www.aamc.org/system/files/c/2/430902-costofapplyingtoresidency.pdf
4. **Hammoud, M., Standiford, T., & Carmody, J. (2020).** Potential Implications of COVID-19 for the 2020-2021 Residency Application Cycle. *JAMA*, 324(1):29-30.
5. **NRMP. (2021, March).** *National Residency Match Program (NRMP)*. Retrieved from Advance Data Tables, 2021 Main Residency Match: https://mk0nrmp3oyqui6wqfm.kinstacdn.com/wp-content/uploads/2021/03/Advance-Data-Tables-2021_Final.pdf

Contact

Matthew Mader, MD
The University of Kansas Health System
mmader@kumc.edu