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# Maximizing Educational Engagement and Program Exposure for Recruitment to the Integrated and Independent Interventional Radiology Programs in a Virtual Environment

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Interventional Radiology residency training programs experienced significant impacts secondary to the COVID-19 pandemic. Prospective resident recruitment and resident education were particularly affected due to limitations on in-person gatherings in effort to curb exposure. Finding ways to mitigate the pandemic's effect on recruitment and education was a challenge faced by residency programs across the nation. This article discusses a single Interventional Radiology program's approach to adapting to the reality of limited interpersonal interaction as well as efforts to maintain engagement for resident recruitment and education in a virtual setting.

**Key Words:** COVID-19; virtual interview; interventional radiology; recruitment.

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## INTRODUCTION

The COVID-19 pandemic brought about numerous challenges for interventional radiology (IR) residency programs in maintaining resident education, medical student recruitment and engagement of all learners (1-5). Travel bans and limitations on in-person gatherings necessary to mitigate viral spread resulted in significant disruptions to the traditional residency recruitment and interview process (6-11). A majority of IR residency programs adopted a virtual approach to the process in accordance with Association of Program Directors in Radiology Interventional Radiology guidelines as well as those of the Coalition for Physician Accountability (5).

At the time of writing of this article, the authors believe the upcoming recruitment season will be similar as has been discussed by the same organizations. It is also difficult to predict if or when another pandemic mirroring the severity of

COVID-19 may occur again. For this reason, it is important for residency programs to be prepared to make the necessary adaptations to continue resident education and recruitment within the confines of in-person restrictions.

This overview seeks to provide our institution's experience with the transition to the virtual education and recruitment model and a focus on various strategies used to promote engagement of applicants in the setting of limited to no in person interaction.

## Virtual Symposium

Our institution hosted a Virtual Interventional Radiology Symposium over the Zoom platform with two primary goals: provide IR education to all levels of medical students and to serve as a recruitment tool for prospective residents. The Virtual Symposium included presentations from IR faculty members that focused on high impact IR topics as well as extreme IR case examples. Additionally, there was an IR Trivia segment included during the event, providing an interactive venue for symposium attendees. An IR resident panel including current residents and alumni (dating back as far as 10 years since graduation) allowed students to gain perspective on the culture of the program and the successes of alumni. In the past, the symposium was typically attended by students at institutions in the surrounding region. The Virtual

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Symposium was open to all interested IR applicants nationwide and allowed for attendance regardless of their current training location. Engagement with the Virtual Symposium was high with 62 medical students signing up to attend the event.

### Exposure to Current Residents and Program Alumni

Virtual meet-and-greet events hosted over the Zoom platform were an additional method used to provide applicants exposure to our program and culture. These informal events were designed for medical students and residents applying to the integrated and independent IR residency programs, respectively. Separate meet-and-greet events were hosted for the applicants to integrated IR and independent IR, corresponding with their application cycles, respectively. The meet-and-greet events were marketed using our program's Twitter account as well as through the Society of Interventional Radiology residency website. Applicants were given the opportunity to speak with current residents about the program in a low-stress environment, similar to the pre-interview dinner the applicants would attend if interviews were in person. Each meet-and-greet event was preceded by a brief welcome from the respective program directors and division director highlighting strengths of the program. The attending faculty members would subsequently exit the virtual environment allowing applicants to ask residents further questions about life in the program. A unique aspect of the virtual event was that prior graduates of the program were also invited to attend and provide insight into life after training, practice models of post-graduate positions, and preparedness for independent practice after training at our program. These graduates spanned 10 years from graduation and practiced IR in a variety of settings including academia, private practice groups, outpatient-based laboratories, among others.

### Resident and Faculty Engagement

Our institution transitioned from traditional in-person journal clubs to virtual journal clubs, which made it easy to include both current residents as well as applicants. Each paper was presented by current residents with a brief analysis. A serendipitous consequence of virtual journal club was that residents and faculty from other programs were able to join, promoting deeper discussion and collaboration with other institutions. World-renowned leaders in IR, and lead authors of the articles were also invited to the journal club events to provide a unique educational opportunity for both members of the residency program and as well as candidates applying to the programs. These journal clubs not only provided applicants exposure to the educational opportunities they could expect from our program, but also insight into the culture of our institution. Attendance at the virtual journal club was generally high in terms of the ratio of number of invitees to those in attendance to the virtual event. All candidates selected for interview for the integrated IR residency were

invited to participate in three separate journal clubs. Similarly, all candidates selected to interview for the independent IR residency program were invited to two separate journal clubs. Approximately 80% of applicants attended at least one journal club and 30% attended all the journal clubs that were available. We hope to continue these collaborative multi-institutional virtual journal clubs in the future given the high level of both trainee and applicant engagement.

Interview candidates for each residency program were additionally invited to our weekly structured didactic sessions allowing them to experience the type of education they would regularly receive at our institution. Candidates selected to interview for the integrated IR residency and independent IR residency had the opportunity to participate in 6 and 4 separate lectures during their selection cycles, respectively. Similarly, approximately 80% of applicants attended at least one didactic session and 30% attended all the didactic sessions that were available. Of the three matched independent IR residents, all (100%) participated in all of events to which they were invited. One of the 2 matched integrated IR residents participated in all events.

### DISCUSSION

The COVID-19 pandemic has significantly affected the delivery of medical education. All residency training programs have been affected, and IR is no exception (1-5). Many programs have described novel virtual learning and recruitment strategies (8-11). Our institution specifically focused on continued engagement of both medical students and residents applying for our integrated and independent IR residency programs, respectively, with exposure to current and past residents, journal clubs, and didactics throughout the interview season. This was an intentional attempt to give the applicants a better sense of the culture of our program, a void that many programs and applicants experienced in this virtual environment. As noted, these virtual events had a high impact on our program as all matched candidates participated in multiple events, some candidates participating in all available opportunities.

### CONCLUSION

The COVID-19 pandemic and resulting precautions have required residency programs to adopt a virtual model for both education and recruitment. The upcoming year's recruitment cycle will be restricted to an online setting and the methods to promote engagement in the virtual environment outlined here may be improved and expanded upon for effective recruitment despite these limitations. Some aspects of a virtual recruitment model may provide utility beyond the restrictions of a global pandemic. Given the significant costs associated with travel for residency interviews, virtual recruitment strategies provide a more equity conscious alternative for the interview process promoting expansion of opportunities for residency programs to engage with

prospective applicants (12). Though an in-person residency interview visit does provide a more in-depth view of a program and its culture, a virtual alternative with multiple opportunities to engage with programs may be a viable alternative for select individuals.

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## REFERENCES

1. Xiao N, Gordon AC, Thornburg B, et al. Impact of COVID-19 on IR fellowship. *J Vasc Interv Radiol* 2020; 31(9):1492–1494. doi:10.1016/j.jvir.2020.06.021. Epub 2020 Jul 2. PMID: 32771280; PMCID: PMC7330558.
2. Goldman D, Voutsinas N, Carlon T, et al. Adaptation: an interventional radiology residency response to COVID-19. *Acad Radiol* 2020; 27(9):1282–1284. doi:10.1016/j.acra.2020.06.007. Epub 2020 Jun 22. PMID: 32854925; PMCID: PMC7306736.
3. Alhasan AS, Alahmadi SM, Altayeb YA, et al. Impact of COVID-19 pandemic on training and well-being in radiology residency: a national survey of diagnostic radiology trainees in Saudi Arabia. *Acad Radiol* 2021; 28(7):1002–1009. doi:10.1016/j.acra.2021.03.019. Epub 2021 Apr 21. PMID: 33893029.
4. Woerner A, Chick JFB, Monroe EJ, et al. Interventional radiology in the coronavirus disease 2019 pandemic: impact on practices and wellbeing. *Acad Radiol*. 2021; 8. doi:10.1016/j.acra.2021.05.025. S1076-6332(21)00264-6Epub ahead of print. PMID: 34210612; PMCID: PMC8185184.
5. Warhadpande S, Khaja MS, Sabri SS. The impact of COVID-19 on interventional radiology training programs: what you need to know. *Acad Radiol* 2020; 27(6):868–871. doi:10.1016/j.acra.2020.04.024. Epub 2020 Apr 27. PMID: 32359819; PMCID: PMC7183945.
6. Yee JM, Moran S, Chapman T. From beginning to end: a single radiology residency program's experience with web-based resident recruitment during COVID-19 and a review of the literature. *Acad Radiol* 2021; 28(8):1159–1168.
7. Patel TY, Bedi HS, Deitte LA, et al. Brave new world: challenges and opportunities in the COVID-19 virtual interview season. *Acad Radiol* 2020; 27(10):1456–1460. doi:10.1016/j.acra.2020.07.001.
8. Nguyen JK, Shah N, Heitkamp DE, et al. COVID-19 and the radiology match: a residency program's survival guide to the virtual interview season. *Acad Radiol* 2020; 27(9):1294–1297. doi:10.1016/j.acra.2020.06.023.
9. Joshi A, Bloom DA, Spencer A, et al. Video interviewing: a Review and recommendations for implementation in the era of COVID-19 and beyond. *Acad Radiol* 2020; 27(9):1316–1322. doi:10.1016/j.acra.2020.05.020.
10. Huppert LA, Hsiao EC, Cho KC, et al. Virtual interviews at graduate medical education training programs: determining evidence-based best practices. *Acad Med* 2020. doi:10.1097/ACM.0000000000003868.
11. Bernstein SA, Gu A, Chretien KC, et al. Graduate medical education virtual interviews and recruitment in the era of COVID-19. *J Grad Med Educ* 2020; 12(5):557–560. doi:10.4300/JGME-D-20-00541.1.
12. AAMC FIRST Team. Cost of applying to residency questionnaire report. Accessed February 28, 2021. <https://students-residents.aamc.org/financial-aid/article/cost-residency-interviews/>. </bib>