National Pediatric Experience With Virtual Interviews: Lessons Learned and Future Recommendations

John G. Frohna, MD, MPH, Linda A. Waggoner-Fountain, MD, MACM, Jill Edwards, MBA, Jill J. Fussell, MD, Beth Wueste, MAEd, Joseph Gigante, MD, Robert J. Vinci, MD, Nicholas M. Heitkamp, MD, MSc, Mekala K. Neelakantan, MD, Laura E. Degnon, CAE, Rebecca L. Blankenburg, MD, MPH for the Pediatrics Recruitment Study Team

DOI: 10.1542/peds.2021-052904

Journal: Pediatrics

Article Type: Special Article


This is a prepublication version of an article that has undergone peer review and been accepted for publication but is not the final version of record. This paper may be cited using the DOI and date of access. This paper may contain information that has errors in facts, figures, and statements, and will be corrected in the final published version. The journal is providing an early version of this article to expedite access to this information. The American Academy of Pediatrics, the editors, and authors are not responsible for inaccurate information and data described in this version.
National Pediatric Experience With Virtual Interviews: Lessons Learned and Future Recommendations

John G. Frohna, MD, MPH, Linda A. Waggoner-Fountain, MD, MACM, Jill Edwards, MBA, Jill J. Fussell, MD, Beth Wueste, MAEd, Joseph Gigante, MD, Robert J. Vinci, MD, Nicholas M. Heitkamp, MD, MSc, Mekala K. Neelakantan, MD, Laura E. Degnon, CAE, Rebecca L. Blankenburg, MD, MPH for the Pediatrics Recruitment Study Team*

*A complete list of group members appears in the Acknowledgments.

Affiliations: aUniversity of Wisconsin School of Medicine and Public Health, Madison, Wisconsin; bUniversity of Virginia School of Medicine, Charlottesville, Virginia; cChildren’s Mercy, Kansas City, Missouri; dUniversity of Arkansas for Medical Sciences, Little Rock, Arkansas; eUniversity of Texas Health, San Antonio, Texas; fVanderbilt University Medical Center, Nashville, Tennessee; gBoston Medical Center, Boston, Massachusetts; hEastern Virginia Medical School, Norfolk, Virginia; iUniversity of Michigan Medical School, Ann Arbor, Michigan; jAssociation of Pediatric Program Directors, McLean, Virginia; kStanford School of Medicine, Stanford, California

Address Correspondence to John G. Frohna, Department of Pediatrics, University of Wisconsin School of Medicine and Public Health, 600 Highland Ave., H6/568 CSC, Madison, WI 53792-4108, (608) 263-1051, frohna@wisc.edu

Conflict of Interest Disclosures (includes financial disclosures): The authors have no conflicts of interest relevant to this article to disclose.

Funding/Support: None.

Abbreviations: None.

Table of Contents Summary
Significantly impacted by the COVID-19 pandemic, the pediatric education community coalesced to support programs and applicants. We present lessons learned and recommendations for the future.

Contributor’s Statement
Drs. Frohna, Waggoner-Fountain, and Blankenburg conceptualized the manuscript, drafted the initial manuscript, and reviewed and revised the manuscript.
Drs. Gigante, Heitkamp, Neelakantan, Vinci and Ms. Edwards, Ms. Fussell, Ms. Degnon, and Ms. Wueste critically reviewed the manuscript for important intellectual content, and reviewed and revised the manuscript.
All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.
Abstract
The coronavirus 19 (COVID-19) pandemic significantly impacted undergraduate and graduate medical education and created challenges that prevented a traditional approach to residency and fellowship recruitment and interviews. Early in the pandemic, the pediatric education community came together to support applicants and training programs and to foster an equitable recruitment process. We describe many of our community’s innovations including the use of virtual cafes to educate programs and highlight best practices for virtual recruitment, and the use of regional webinars to highlight residency programs and provide information to applicants. Surveys of applicants and programs suggest that the virtual interview process worked well overall, with applicants and programs saving both time and money, and programs maintaining a high rate of filling their positions. Based on this experience, we highlight the strengths and weaknesses of three potential models for future interview seasons. We close with a series of questions that need further investigation in order to create an effective and equitable recruitment process for the future.

Introduction
The coronavirus 19 (COVID-19) pandemic has significantly impacted undergraduate and graduate medical education and created challenges that prevented a traditional approach to residency and fellowship interviews. In response to health concerns, travel limitations and pandemic disparities, residency and fellowships quickly shifted to a virtual interview process for the 2020-21 academic year.\(^1\) Despite these challenges, Pediatrics successfully filled 2860 of 2901 positions (98.6%) in the 2021 Match, which increased slightly from the 98.2% fill rate in 2020.\(^2\) For the pediatric fellowship matches that occurred in Fall 2020, the match rates were similar or increased for 16 of 17 pediatric specialties.\(^3\)

To prepare for the pandemic’s impact on the 2020-21 interview season, the Association of Pediatric Program Directors (APPD) collaborated with other national pediatric education organizations to convene two action teams, the Residency Recruitment Action Team and the Fellowship Recruitment Action Team. These teams included representatives from each of these key stakeholder groups: Council on Medical Student Education in Pediatrics (COMSEP), Council of Pediatric Subspecialties (CoPS), Association of Medical School Pediatric Department Chairs (AMSPDC), and three learner groups,
American Academy of Pediatrics (AAP) Section on Pediatric Trainees (SOPT), NextGenPediatricians (a resident/fellow-led mentoring program for fourth year medical students who are underrepresented in medicine [UIM] due to race/ethnicity and applying into pediatrics/combined pediatrics programs), and FuturePedsRes (a student-run grassroots organization to help students navigate the recruitment process in pediatrics). The Residency Action Team included medical students and residents, and the Fellowship Action Team included fellow representatives.

The Action Teams developed a series of recommendations for the 2020-21 interview season with the goal of optimizing the recruitment process for both learners and programs. Four core principles guided the recommendations: 1) Helping learners find programs that match their career goals while providing an atmosphere conducive to their learning styles; 2) Providing residency/fellowship programs with a standardized approach to recruitment; 3) Creating a fair and equitable application process for both learners and programs; and 4) Minimizing the disruptions created by the COVID-19 pandemic and ensuring reasonable health precautions during the interview season.

The goals of this manuscript are to: 1) Describe the pediatric education community’s approach to the 2020-21 interview season, findings from our preliminary analysis, and lessons learned; and 2) Using the lessons learned, we will a) discuss the pros and cons of three interviewing options, including in-person, virtual, and hybrid models, and b) identify questions that require further study before making long-term changes to the interview process.

The Pediatric Education Community’s Approach to the 2020-21 Interview Season

The COVID-19 pandemic had several adverse impacts on medical students and residents pursuing pediatric residency or fellowship positions, respectively. First, many applicants had an altered exposure to both general and subspecialty pediatric disciplines. Medical students experienced
cancellation or significant disruption in their clerkships, including sub-internships, which affected both their clinical experiences and ability to obtain letters of recommendation. Applicants were also impacted by the cancellation of away rotations. Programs had less data than in prior years to assess applicants since research experiences and volunteer activities were interrupted, and licensure exams, including both United States Medical Licensing Examination (USMLE) and Comprehensive Osteopathic Medical Licensing Examination (COMLEX) exams, were postponed. The COVID-19 pandemic disproportionately affected black, indigenous, and people of color (BIPOC) applicants, those from lower socioeconomic status backgrounds, and international medical graduates (IMGs). In response to these concerns, APPD, COMSEP, CoPS, and AMSPDC proposed several recommendations and developed several initiatives designed to assist applicants and programs.

**Helping learners navigate the virtual interview process**

Our Action Teams took several steps to help applicants navigate the virtual interview season. Through the wide dissemination of our recommendations and our webinars, we reassured residency and fellowship applicants that programs recognized that there might be gaps in their clinical, research, advocacy, and other extracurricular experiences due to the impacts of COVID-19. Our initial communication with programs and applicants referred applicants to the Association of American Medical College’s (AAMC) “Apply Smart” website, which provides evidence-based guidance for applying to an optimal number of residency programs. We also provided reminders of this guidance during the webinars.

APPD and COMSEP partnered with a new medical student-led group, FuturePedsRes, and hosted a series of webinars designed to improve student awareness of programs across the country and help mitigate applicant anxiety. In total, we hosted nine 90-minute webinars (2 general webinars...
regarding the application and interview process, 5 regional webinars, 1 webinar for osteopathic students, and 1 webinar for IMGs). The regional webinars consisted of (1) a brief overview of the region, (2) small groups comprised of 5-8 programs that made brief presentations on their programs, (3) live question-and-answer with programs, and (4) opportunities for students to meet exclusively with residents. The didactic content of these webinars lasted 60 minutes and the time with the students and residents was 30 minutes. Programs developed a one-slide infographic using a uniform template to standardize the information available to the applicant attendees. We recorded the small group presentations and placed them on YouTube (https://www.youtube.com/c/futurepedsres) for access by interested applicants. These webinars were well-received with over half of all pediatric programs participating (N=138/211) and a consistently large number of applicants in attendance for each session (range 90-936, mean 431). FuturePedsRes also encouraged pediatric applicants to “take the pledge” through the social media #ApplySmart Campaign to limit their applications to 15 programs as recommended by the AAMC (barring other mitigating circumstances), with the goal of decreasing overall numbers of applications, so programs could complete holistic applicant reviews. For fellowship applicants, APPD and CoPS hosted a Virtual Café to provide information about the fellowship season and answer applicant questions.

Providing residency/fellowship programs with a standardized approach to recruitment

APPD, COMSEP, and CoPS provided guidance and support to programs in several different ways. First, we encouraged programs to develop strategies to showcase their programs virtually, by updating their websites and developing digital brochures, videos, or other resources to highlight important aspects of their programs. APPD, COMSEP, CoPS, and AMSPDC developed a series of Virtual Cafes to provide an opportunity for programs to share best practices in virtual recruitment.10 A
group of over 20 program coordinators formed the APPD Recruitment Resource Toolkit Development Team and compiled an extensive collection of tools to support virtual recruitment and the professional development of program learners and leaders.11

Second, we provided programs with guidance about conducting virtual interviews. Given the national recommendations for virtual interviews, we discouraged programs from scheduling any in-person interviews, even for internal or local applicants. We recommended that programs offer the daytime components of the interview day (individual interviews, conferences, tours, etc.) on a single day to make scheduling easier for applicants.

Creating a fair and equitable application process for both learners and programs

Despite the challenges of interviewing in a new format and during a pandemic, APPD and COMSEP also issued guidance designed to optimize equity for all parties. First, while holistic review of residency and fellowship applications have been discussed for several years, our heightened focus on equity helped us to strongly encourage programs to move towards a holistic review of applications. The APPD described and highlighted models for performing holistic reviews during webinars for program leaders. We reminded programs that students’ access to educational, research, and extracurricular opportunities are inequitable at baseline, and many students experienced non-traditional clerkships during the pandemic including virtual learning experiences and online educational programming. In addition, we asked programs to re-examine their traditional criteria for offering interviews and to modify or waive requirements for pediatric-specific letters of recommendation, a pediatric sub-internship rotation, and completion of USMLE Step 2CK or COMLEX Level 2-CE by the time of initial review. While we developed these recommendations in response to COVID restrictions, applicants also
benefitted from minimizing the use of test scores and other elements of an applicant’s portfolio that are known to introduce biases into the interview process.

Second, for residency interviews, we recommended that the AAMC postpone the Electronic Residency Application Service (ERAS) release date by three weeks to allow adequate time for applicants and medical schools to prepare their applications and asked programs to notify all applicants if they would be offered an interview, waitlisted, or not offered an interview by December 15. We recommended similar adjustments for the fellowship interview season. Again, we strongly discouraged “second look” visits, even for internal or local applicants to maintain a safe and equitable experience for all applicants.

We also made recommendations to limit post-interview communication. Beyond adhering to existing National Resident Matching Program (NRMP) rules, we encouraged programs and applicants to only communicate in the event of specific questions or to link applicants with mentors and/or research colleagues. Recognizing that programs were under significant financial constraints due to COVID-19, and that some programs had reduced administrative support, we asked that programs not provide applicants with gift cards for food and that they not provide any program-related gifts to applicants.

Finally, we structured the regional webinars for residency applicants described previously to provide equitable opportunities for programs. We invited all programs to participate, elected regional APPD leaders gave an overview of the opportunities in the region, and programs presented information about their program using a templated infographic to reduce variability. To remain equitable to the programs as well as applicant participants across the series, we randomly assigned students to small groups for the residency program presentations with access to recordings of each group afterward.
Preliminary Findings and Lessons Learned During the 2020-21 Interview Season

The APPD deployed two sets of surveys to assess the impact of the virtual interview season on stakeholders including program directors, program coordinators, and residency applicants.

The first survey, developed by the APPD Recruitment Resource Toolkit Development Team, solicited feedback from residency programs. This survey included questions to assess the usefulness and efficacy of the virtual toolkit as well as programs’ overall satisfaction with the tools provided and/or used. Additionally, the survey reviewed the 2019-20 interview season in comparison to the 2020-21 virtual season regarding areas such as time commitment, workload, and technology. The survey consisted of both forced-choice and open-ended questions, and was IRB-approved and reviewed by the APPD Research and Scholarship Learning Community. We distributed the survey by email to residency program directors from January 2021 – May 2021, with two additional reminders for non-respondents.

We received responses from 97/200 residency program directors (49%). Residency programs reported completing a greater number of interviews in 2020-21 (Table 1). While programs reported an initial increase in workload in preparing for the virtual season, they also endorsed that the inaugural virtual interview season went better than expected. In addition, they felt that the virtual process saved time and anticipated continued time savings if the interview season remained virtual in future years. While a hybrid model for interviews was not offered in this survey, residency directors (58%) had a preference for virtual interviews only if an applicant had extenuating circumstances, and only 2% expressed a preference for in-person interviews for all applicants. Advantages to the virtual interview seasons reported by respondents included greater equity for applicants and cost savings for both programs and applicants. Challenges included technological issues and less opportunity for in-person interactions.
The second survey was sent to residency applicants who participated in the #PedsMatch21 Webinar Series. This survey solicited feedback on the webinars and collected data related to the virtual interview process, including perceptions on the current season and their preferences for future interviewing models. This survey was distributed by email in March 2021, with 2 reminders for non-respondents, and closed prior to Match Day (March 19, 2021). The survey included both forced-choice and open-ended questions.

We received responses from 265 residency applicants (33%) of the 805 who attended the webinars. Recognizing that groups of applicants may have varying perspectives, we categorized respondents into three groups: MD, DO, and IMGs (Table 2). The survey found that DO and IMGs applied to more programs than MD students and both MD and DO applicants interviewed with and ranked a similar number of programs. All three groups cancelled a low number of interviews. Each of the groups reported that they were only slightly more likely to rank programs in cities that they had lived in or previously visited (MD 2.5 (SD=1.4), DO (2.5 (1.5), IMG 2.4 (1.4), where 1=Strongly Agree and 3=Neutral), which was unexpected given previous studies identified geography as an important predictor regarding where applicants rank programs.12,13 Using a slider scale from 0 (no preference) to 100 (best situation imaginable), all applicants rated a hybrid model (defined as virtual faculty interviews with on-site visits for tours and meetings with residents/program leaders) significantly higher than the in-person or virtual models (hybrid 78.5 (SD=28.4) vs in-person 56.0 (26.1) vs virtual 50.6 (27.2), p<.0001 for both comparisons).

When asked about advantages of the virtual interview season, a majority of respondents reported significant savings in interview costs and time, less fatigue due to lack of travel, and less difficulty scheduling interviews. Several respondents stated some variation of, “more even playing field for those who do not have as much financial ability to travel.” In terms of disadvantages to the virtual season,
many respondents reported the inability “to more thoroughly get to know a program, its culture and people, its facilities, and its city.” Others reported fatigue from being on virtual interviews for long periods of time, and some applicants were concerned that programs were able to “hide” the less desirable aspects of their programs. Some respondents also expressed concern about “interview hoarding” by other applicants.

Consideration of Three Interview Options

The Residency Recruitment and Fellowship Recruitment Action Teams met regularly during the interview season to review the experiences of stakeholders and after the residency and fellowship matches to consider three options for conducting interviews during the 2021-22 season. In April 2021, the Coalition for Physician Accountability (COPA) issued preliminary recommendations from their Undergraduate Medical Education to Graduate Medical Education Review Committee for the UME to GME transition. The recommendations COPA made about the interview process were consistent with the guidance of our expert panel.

The three options for interviews that the Action Teams discussed included conducting interviews all in-person, all virtually, and hybrid interviews (consisting of virtual interviews, and a separate, often-abbreviated in-person component) (Table 3). Below we discuss the pros and cons of each model:

*Interviews All In-Person*

This model is the traditional model for residency and fellowship interviews, where interviews occur in-person and applicants are able to tour the clinical facilities, meet with program residents and faculty, and potentially explore the city where they would be living. Benefits of this model include: better ability of programs to assess applicant communication skills; more organic and informal conversation between applicants and residents/faculty/coordinators at programs; and opportunity for
applicants to evaluate the facilities and resources of the programs. This option also allows applicants to see the city where they might live and work. In addition, UIM applicants have highlighted that in-person interviews provide an opportunity to consider the institution’s culture and inclusion.

There are several costs associated with this option. While the financial cost to applicants varies based on specialty choice and range of geography desired, it has been estimated that the median cost of a traditional residency interview season is around $4000 with a range from $1000 to over $11000. The median cost per program for residency recruitment for internal medicine programs was $148,000 in 2009; using different methodology, a survey of Family Medicine programs estimated a cost in excess of $25,000 per program in 2019. In addition to the financial costs, applicants usually spend several weeks traveling to and interviewing at programs, which results in decreased time on clinical rotations. In addition to financial costs, there are broader environmental impacts of interview travel. Recently, a study from the University of Michigan estimated a carbon footprint from travel of 3.07 metric tons CO₂ per student, with an average of 14.4 interviews per person.

While vaccination rates are rising, especially among health care personnel, the medical risk of travel, the differing ability of health systems to host large numbers of applicants, and the variable restrictions on travel by home institutions and around the country are further considerations for the 2021-2022 interview season.

*Interviews All Virtual*

The advantages for this model based on the 2020-21 interview season were the significantly reduced financial costs for applicants and programs, and less time away from the education program, an observation that was particularly notable for fellowship applicants. An all virtual model for interviews may also support the shift toward more holistic review of applicants, as it may foster an increased focus
on the application materials, with attempts to select candidates based on a broad range of characteristics that are important to programs. Virtual interviews may also mitigate some of the inequity inherently present in the current interview process. For the 2020-21 interview season, having all programs and applicants interview using this model equalized the playing field for all involved. The significantly lower financial costs of virtual interviews also resulted in a more equitable opportunity for applicants who could not afford to interview at as many places in person. The virtual-only interview process may have encouraged applicants to apply to more geographically diverse programs. The virtual model was also used successfully for medical school interviews, with students citing many of the same advantages as residents.19

On the other hand, a virtual-only interview process makes it challenging for programs and applicants to really get a “feel” for each other, an impact that is hard to define and difficult to measure. Additionally, the lower cost of interviewing could lead to applicants interviewing at more programs, adding to the administrative work of programs to review more applications. This was counteracted for residency applications in 2020 with the extensive FuturePedsRes, APPD, and COMSESEP campaign to only apply to 15 programs for the residency match. ERAS reports that overall, pediatric applicants applied to a slightly decreased median number of programs in 2020-21 compared to 2019-20 (30 vs 31), whereas other large specialties saw increases in the mean number of applications per person (Family Medicine +1.46, Internal Medicine +7.55, and General Surgery +5.74). Given that IMG and DO applicants generally apply to more programs, and more IMG applicants were in the pools for General Surgery and Internal Medicine, we also looked at the change in the mean numbers of applications for MD applicants from 2019-20 to 2020-21 seasons for these specialties and found that only Pediatrics had a decreased number of applications per applicant: Pediatrics (-2.06), Family Medicine (+1.86), Internal Medicine (+1.89), and General Surgery (+3.63).20
**Hybrid Model**

Given the challenges of both the in-person and virtual models, a hybrid model might maximize the benefits of each option, while providing flexibility for applicants and programs. The hybrid model has been explored prior to the COVID-19 pandemic by O’Malley and colleagues.\(^{21}\) In their model, the University of Arizona Internal Medicine Residency program developed a “SPLIT” interview process in 2017 to address costs, faculty and resident burden, and duplication of program director efforts. Their outcomes have included increasing the number of interviews by 50%, improved flexibility, decreased total visit events by 70%, and 100% of applicants are now interviewed by a program director and associate program director.\(^{21}\)

There are two major obstacles to the widespread use of this model, particularly for the main residency match: scheduling logistics and potential for inequity. Planning a hybrid schedule is complex, because this requires programs to allow for a series of virtual interview days in addition to a set of in-person sessions. Applicants would have to manage a more complicated scheduling process to accommodate all of these events. Secondly, regarding equity, even if programs stated that an in-person visit was not required for an applicant to be ranked, applicants would likely feel an obligation to travel due to the inherent competitiveness of the application process, and some applicants may be better positioned than others to avail themselves of this option. There is also the potential for programs’ bias towards those applicants who attend in-person events. The COVID pandemic has shed light on these inequities in the “art of recruitment” and while we must balance the potential impact of signals related to post-interview communication, interview interactions, etc., we must also be mindful that the nature of such “signals” are subjective measures that can add bias to the interview process. An option to limit this bias would be to separate the in-person visit from the ranking process, but the logistical challenges of scheduling these events would still exist. One consideration is to partner with the NRMP to move the...
program rank date a month earlier than applicants, thereby allowing applicants the option to complete an in-person visit without worry that it would influence the program’s rank list. Another option is to have a centralized GME office run the in-person visit component to minimize any bias from program/applicant interaction. Finally, in-person visits increase the cost to both applicants and programs, challenging the goals of equity that our community strives to uphold.

Recommendations and Areas for Further Study

After gathering data from stakeholders including applicants, program leadership, and chairs, the Recruitment Action Teams have recommended proceeding with virtual-only interviews in 2021-22, with the plan to re-evaluate for future years thereafter.\textsuperscript{22} There is still significant uncertainty about the impacts of the COVID-19 pandemic on health systems and cities across the country. Given that programs and applicants felt that virtual residency recruitment was overall effective this past year, the Action Teams believe that the benefit of reduced financial costs and increased applicant equity in a virtual system outweighed the downsides of not having program leaders and applicants meet in-person. If the health risks continue to decline, it would certainly be possible for applicants to visit the cities where they might potentially match; we still recommend that programs not host applicants in their health systems (due to burdens on the system) or have program personnel meet with the applicants (due to the risk for inequity among applicants and programs during such a visit).

An important finding from this work was the value of advocacy from the student-led, grassroots group FuturePedsRes. Navigating the myriad of challenges related to moving to a virtual interviewing season was supported by the innovative FuturePedsRes organization and their use of social media to develop a more effective communication strategy to all pediatric applicants. They were also able to support our efforts to recommend adoption of the Apply Smart Campaign and their advocacy efforts
may play a role in assisting our pediatric organizations in many domains of the medical education process in the future.

There are many questions to be answered in order to make recommendations for the future, beyond the current pandemic. First, what is the impact of not having applicants and programs meet in-person? Will more residents and fellows change programs than usual, or is there enough information in virtual interviews to ensure a good match? Can programs improve their own virtual interviewing skills to glean the information necessary to mitigate possible mismatches? Can programs create virtual events to share their program culture in a way that allows applicants to get a “feel” for their future program? What is the impact of virtual-only interviews on the geographic distribution of trainees?

Second, are there ways to improve equity during the interview process? What are the best practices for decreasing bias? Can the interview season evolve to allow for reduced financial expense for applicants and programs? Can we find a way to benefit applicants while reducing the number of interviews that each program has to conduct to reliably fill their program? Can some of the “signaling” methodologies (where applicants are given a limited number of “signals” that they can send to certain programs to indicate a high level of interest in the program) as used in otolaryngology residency programs be a solution? Can programs enter their match list before applicants, allowing time for applicants to experience in-person visits to a select number of programs before entering their own match lists?

Finally, do residency and fellowship programs need to function in the same way? What special accommodations might be made for fellowship applicants, for whom a niche program or the connection with specific mentors might be more important than for a residency program? Is a modified process needed for smaller programs or those in rural areas to attract applicants? How do applicants who are
couples matching in different specialties manage the differences in interview processes? And can modifications reduce the impact of the interview season on the environment?

The COVID-19 pandemic has created an opportunity to re-examine the entire recruitment process for residency and fellowship training. It has also highlighted inequities in the traditional system and forces educators to refine – or even redefine - the process so it is effective and equitable for both for applicants and programs.

Acknowledgments

Pediatrics Recruitment Study Team
Melissa Bales, C-TAGME – Indiana University School of Medicine; Katherine M. Bartoletta, MD, MS – University of Washington, Seattle Children’s Hospital; Debra Boyer, MD, MHPE – Boston Children’s Hospital; April O. Buchanan, MD – University of South Carolina School of Medicine Greenville / Prisma Health; Douglas Carlson, MD – Southern Illinois University; Jennifer G. Duncan, MD – Washington University School of Medicine; Molly Rose Elkins-Ryan – Rush University; Rebekah Fenton, MD – Ann & Robert H. Lurie Children’s Hospital of Chicago; Hayley Gans, MD – Stanford School of Medicine; Nami Jhaveri MD, MPH – Kaiser Permanente Northern California; Carrie M. Johnson, MBA – Stanford School of Medicine; Abigail Keogh, MD – Brown University; Jennifer C. Kesselheim, MD, MEd – Dana-Farber/Boston Children's Cancer and Blood Disorders Center, Harvard Medical School; Rachel E. Korus MD – Boston Children’s Hospital and Harvard Medical School; Alexandra Mientus, MD – University of Louisville; Amanda D. Osta, MD – Loyola University Medical Center; Kris Rooney, MD – Lehigh Valley Reilly Children’s Hospital; Sandra M. Sanguino, MD, MPH – Northwestern University Feinberg School of Medicine; Danielle Shin, MD, PhD – Stanford School of Medicine; Adrienne Smallwood, MD – Baylor School of Medicine; Meghan Stawitcke, BA – Stanford School of Medicine; Alicia Williams, MD – Ann & Robert H. Lurie Children’s Hospital of Chicago; Xavier Williams, MD – University of North Carolina
References


Table 1: Residency Program Director Interview Season Experience and Recommendations for Future Interview Models

<table>
<thead>
<tr>
<th>Interview Season Comparison</th>
<th>2019-20 Season</th>
<th>2020-21 Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of applicants interviewed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-50</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>51-100</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>101-150</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>151-200</td>
<td>21%</td>
<td>18%</td>
</tr>
<tr>
<td>201-250</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>251-300</td>
<td>14%</td>
<td>16%</td>
</tr>
<tr>
<td>&gt;300</td>
<td>22%</td>
<td>43%</td>
</tr>
<tr>
<td>Estimated total time commitment per week (combined hours for all team members - PDs, APDs, coordinators, chief residents, faculty)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-100 hours</td>
<td>31%</td>
<td>30%</td>
</tr>
<tr>
<td>101-200 hours</td>
<td>31%</td>
<td>25%</td>
</tr>
<tr>
<td>&gt;200 Hours</td>
<td>38%</td>
<td>45%</td>
</tr>
<tr>
<td>The transition to virtual interviews affected the workload for my program (5=significantly increased, 1=significantly decreased)</td>
<td>3.92</td>
<td></td>
</tr>
<tr>
<td>The process of virtual interviewing was (% better than expected)</td>
<td>97%</td>
<td></td>
</tr>
<tr>
<td>The virtual interview season saved time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>Unsure</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Virtual interviewing will save time in future years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>61%</td>
<td></td>
</tr>
<tr>
<td>Unsure</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>Based on the experience in the 2020-21 interview season, in future seasons, our program would offer interviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All in-person</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>All virtual</td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td>Virtual interviews for applicants with extenuating circumstances only</td>
<td>58%</td>
<td></td>
</tr>
<tr>
<td>Virtual or in-person interviews, depending on applicant preference</td>
<td>13%</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Applicant Interview Season Experience and Recommendations for Future Interview Models

<table>
<thead>
<tr>
<th>Applications and Interviews</th>
<th>MD Students (N=161)</th>
<th>DO Students (N=48)</th>
<th>International Medical Graduates (N=56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programs Applied to Interviews Cancelled</td>
<td>27.7 (10.4)</td>
<td>47.1 (18.1)</td>
<td>117.3 (116.0)</td>
</tr>
<tr>
<td>Programs Interviewed at Programs Ranked</td>
<td>14.7 (4.4)</td>
<td>13.6 (5.3)</td>
<td>8.6 (7.1)</td>
</tr>
<tr>
<td>I would have cancelled more interviews if the interviews were in person*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>43%</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>No</td>
<td>21%</td>
<td>28%</td>
<td>54%</td>
</tr>
<tr>
<td>Maybe</td>
<td>36%</td>
<td>41%</td>
<td>26%</td>
</tr>
<tr>
<td>Rating of Future Interview Models (0-100 slider scale)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-person</td>
<td>56.4 (26.2)</td>
<td>48.9 (24.9)</td>
<td>53.5 (28.2)</td>
</tr>
<tr>
<td>Virtual</td>
<td>50.2 (27.5)</td>
<td>55.6 (22.9)</td>
<td>55.7 (31.0)</td>
</tr>
<tr>
<td>Hybrid</td>
<td>77.6 (29.4)</td>
<td>81.2 (25.4)</td>
<td>75.6 (32.3)</td>
</tr>
</tbody>
</table>

Values shown as mean (standard deviation). *International applicants were less inclined than MD or DO students to cancel interviews if they were held in person (p<.05). **All groups preferred the hybrid model significantly more than the either the in-person or virtual models (p<.0001 for both comparisons).
Table 3: Pros and Cons of Three Interview Models

<table>
<thead>
<tr>
<th></th>
<th>All In-Person</th>
<th>All Virtual</th>
<th>Hybrid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pros</strong></td>
<td>• It is the “standard”</td>
<td>• Better for applicants in terms of equity, cost, and time</td>
<td>• Maximizes the benefit of the virtual interviews and allows applicants to see the program in person, and potentially for the program to meet the applicants</td>
</tr>
<tr>
<td></td>
<td>• Applicants get to visit the program</td>
<td>• Encourages transition to holistic review of candidates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Programs meet the applicants</td>
<td>• Programs have already invested in resources for virtual interviews</td>
<td></td>
</tr>
<tr>
<td><strong>Cons</strong></td>
<td>• Significant costs for applicants in terms of time and travel</td>
<td>• Limited opportunity to experience the “feel” for the program, community, city, etc.</td>
<td>• May not be equitable if the applicants feel they must visit all programs to demonstrate their interest</td>
</tr>
<tr>
<td></td>
<td>• Equity concerns</td>
<td>• Could contribute to application excess (though not seen in pediatrics in 2020)</td>
<td>• Increases the work for programs and applicants</td>
</tr>
<tr>
<td></td>
<td>• Environmental impact with substantial carbon footprint</td>
<td>• May negatively impact small programs who may benefit by having applicants see the program</td>
<td></td>
</tr>
<tr>
<td><strong>Bottom Lines</strong></td>
<td>• Allows applicants to see all programs and programs to meet all applicants</td>
<td>• Emphasizes equity and safety</td>
<td>• Provides some measure of equity and allows programs flexibility for their own circumstances</td>
</tr>
<tr>
<td></td>
<td>• May be a health/travel risk until pandemic resolves</td>
<td>• Aligns with Coalition for Physician Accountability recommendation for virtual interviews in 2021-22</td>
<td>• Increased work for programs, and increased costs for applicants</td>
</tr>
<tr>
<td></td>
<td>• More expensive for both applicants and programs</td>
<td>• May disadvantage some programs and applicants</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
National Pediatric Experience With Virtual Interviews: Lessons Learned and Future Recommendations
*Pediatrics* originally published online July 30, 2021;

**Updated Information & Services**
including high resolution figures, can be found at:
http://pediatrics.aappublications.org/content/early/2021/07/29/peds.2021-052904.citation

**Permissions & Licensing**
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.aappublications.org/site/misc/Permissions.xhtml

**Reprints**
Information about ordering reprints can be found online:
http://www.aappublications.org/site/misc/reprints.xhtml
National Pediatric Experience With Virtual Interviews: Lessons Learned and Future Recommendations


*Pediatrics* originally published online July 30, 2021;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

http://pediatrics.aappublications.org/content/early/2021/07/29/peds.2021-052904.citation