Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
COMMENTARY

Rethinking residency recruitment, application, and interview processes to benefit applicants and programs long-term

Mary Joyce B. Wingler*, David A. Cretella, Jamie L. Wagner, Katie E. Barber, P. Brandon Bookstaver, Bruce M. Jones, Christopher M. Bland, Elizabeth W. Covington, Maiuc Tran, Stefanie A. Stramel, Darrell Childress, Michelle Turner, Lauren Freeman, Kayla R. Stover

ABSTRACT

Pharmacy residency recruitment and interviews have been significantly impacted by the COVID-19 pandemic. Many traditional recruitment events and interviews were transitioned from in-person to virtual, and new approaches to recruitment, such as virtual open houses, were developed. There are limited data on how these changes impacted pharmacy residency applicants and programs, and the future of virtual events is currently unknown. We highlight recommendations for virtual recruitment and interviews and provide suggestions for residency programs and national organizations to improve virtual processes in the future.

© 2022 American Pharmacists Association®. Published by Elsevier Inc. All rights reserved.

Background

The COVID-19 pandemic has presented numerous challenges to residency applicants and programs. During the 2020-2021 academic year, students endured virtual didactic education, altered pharmacy practice rotations, and a disrupted residency application process. In the face of this unprecedented situation, national leaders and professional organizations offered some guidance; however, there was limited standardization across programs, especially regarding residency recruitment. Residency programs diverged from their traditional candidate evaluation strategy by reducing or eliminating in-person contact and increasing use of virtual tools for candidate evaluation and recruitment. Unfortunately, this disruption continued into the 2021-2022 cycle with uncertainty arising from the continuing pandemic.

The pharmacy residency process had significant challenges before the COVID-19 pandemic. While the number of post-graduate year 1 residency applicants declined in 2021 and 2022, it still dwarfed available residency positions.1 In addition to the mental strain of competing for limited spots, the median cost of pursuing residency ranged between $1756 and $2280 based on results from 2 pre-COVID-19 surveys.2,3 Many applicants use student loans to cover the cost of pursuing residency, which adds to the substantial debt for the graduating students.2 This mental and financial strain is important to consider as the profession of pharmacy strives to promote well-being among trainees and pharmacists, especially with the added stresses accompanying COVID-19.

The aforementioned pandemic-associated changes have had a dramatic impact on the traditional processes of recruitment, application, and candidate selection. What remains unknown is which changes will leave a permanent impact on pharmacy residency in the future and which processes will return when COVID-19 becomes endemic. This is a unique opportunity to re-evaluate the process for residency applicants and programs and assess optimal use of virtual communication. As the 2022-2023 application cycle nears, we should reflect on both the positive and negative outcomes resulting from these changes and consider what improvements can be made to better meet the needs of applicants and programs moving forward.

Recruitment

Prior to the COVID-19 pandemic, recruitment for pharmacy residency programs occurred through several different avenues. The most popular and helpful recruitment events
A recruitment strategy implemented during the pandemic by many programs is virtual open houses. These have allowed applicants to speak with residency representatives in a more intimate environment than virtual showcases. However, attending a virtual open house for every program an applicant is interested in can be extremely time-consuming. The explosion of open houses also created scheduling issues for students due to the sheer number hosted and differences in time zones. Additionally, locating information about when virtual open houses are occurring may be challenging for applicants due to the heterogeneity in how recruitment information is shared. This model may not promote the best lifestyle balance for applicants during recruitment season; therefore, national, regional, and local showcases may be more sustainable options for recruitment after the pandemic.

Online resources also play a vital role in recruitment. Residency directories provide basic information about most programs but are limited in their ability to be rapidly updated and have not traditionally displayed recruitment event details. Residency websites are good sources for available rotations, requirements, current preceptors, benefits, and recruitment information. From the applicant perspective, staying up to date with recruitment details by checking individual residency websites is a difficult task, especially if applying to many programs. Students were creative during the COVID-19 pandemic and developed a shared online document with recruitment information for many programs, similar to those circulated for residency interviews in the past (unpublished data); however, these documents often are not all-inclusive. During COVID-19, there has been a dramatic rise in the number of residency programs using social media for recruitment. Optimized use of these platforms has the potential to increase engagement with interested applicants and amplify knowledge of recruitment events and other residency information. As with other online recruitment strategies, there are challenges with using social media, including time needed to create content and determining how to reach the target audience. An appraisal of each online resource, particularly those at the national level, should be undertaken to ensure the applicants’ and programs’ needs are met if virtual recruitment continues in the future.

Recruitment has significantly changed during the COVID-19 pandemic, and some of these changes may persist. Virtual recruitment activities may create challenges for discussion and dissemination of information, but they lower the financial cost commitment of recruitment, potentially allowing programs to reduce financial barriers and geographic limitations. Determining which recruitment strategies optimize both time and value for both the candidate and program will be important for the future.

**Applications**

Until COVID-19, the number of pharmacy applicants participating in the Match increased annually. Even during the first year of the pandemic, residency applicants from 2020 to 2021 were essentially unchanged (7364–7321). However, a large decline in applicants for the 2022 Match (7321–6417) was seen, and it is unclear how this trend will continue. Nevertheless, while the number of positions continues to rise,
they are not increasing at a pace to contend with the number of applicants, thus leaving many applicants without residency positions every year. This mismatch prompts students to apply to more programs in an effort to increase their chances of matching. This information is not necessarily evident in the publicly available American Society of Health-System Pharmacists (ASHP) National Matching Services data, as the number of applicants is the metric tracked. The Match rate underestimates the number of applicants who unsuccessfully pursue residency, as this number does not account for students who do not receive any interviews and cannot submit a rank list. However, there is historical context within the medical literature that indicates “application inflation” may be occurring. Application inflation is described as an increase in the number of residency applications submitted to programs despite the lack of evidence that this practice assists applicants in securing a residency position. Factors that contribute to this “application inflation” include peer pressure, suggestions from recent graduates from the same institution, fear of not matching, program website data, advice from advisors, and social media. While students may perceive a benefit to increasing the number of applications they submit to programs, this can actually negatively impact both the programs and students. An increase in the number of applications submitted to programs can result in more time spent reviewing applications, changing the standards for whom to invite, or adding more interview days to accommodate more applicants. When applying to more programs, students will consequently face a rise in costs based on applications alone.
During the 2020–2021 and 2021–2022 residency years, the increased cost from applications could have been offset by decreased travel costs when almost all programs conducted virtual interviews. However, the 2022–2023 recruitment season could change this if any programs plan to return to in-person interviews. It is imperative that national pharmacy residency leaders determine if “application inflation” is occurring in pharmacy residencies and investigate ways to assist both programs and applicants through this process.

Interviews

ASHP strongly discouraged in-person interviews during the COVID-19 pandemic, and most residency programs only offered virtual interviews accordingly. Many parts of the interview had to be altered, including day-of format and informal activities, but all programs worked to emulate in-person interactions as best as possible. Some difficulties associated with virtual interviews were similar to those described for recruitment (technological issues, multiple platforms, “fit” assessment), while others were unique and may have affected programs and applicants differently. For example, students may not have dependable internet connectivity, leading to suboptimal interview impressions and experiences. Preceptors, residents, and residency program directors remained in close proximity during virtual interviews, and the camaraderie and discussions after the interviews would have expected to remain similar. Applicants, however, endured sitting alone for hours in front of a computer. In the absence of normal social cues, verbal prompts during virtual interviews can be awkward more so for interviewees. In-person interview breaks often gave time to decompress but among fellow applicants, which may have provided moments of levity during a stressful day. Virtual breaks are equally important but can be isolating and, if extremely long, may add to the applicants’ anxiety level. Due to the loss of most informal interactions, both programs and applicants were less able to assess group dynamics and individual/institutional personalities. Overall, the changes necessitated by virtual interviews influenced the evaluation and ranking process, though the full impact will be determined by future studies.

Despite the obstacles faced, there are advantages associated with virtual interviews. A completely virtual interview process lowers the barrier cost of time and money for applicants. Reed et al. reported interview travel and accommodations cost students a median of $485 (interquartile range, $50–$1100) before pandemic. A separate survey found their respondents spent a median of $840 for traveling to onsite interviews. Applicants likely spent little to no cost with virtual interviews, and decreasing expenses across the spectrum of residency search–related activities offers a more equitable opportunity for all applicants. In addition, several studies evaluating pandemic-associated virtual interviews for medical residencies and fellowships have reported a generally positive experience. While applicants and programs in these studies showed a preference for in-person interactions, the results demonstrate that virtual is a feasible strategy for some or all of the interview process.

Due to the advantages and disadvantages of in-person versus virtual interviews, leaders in pharmacy residency should evaluate the interview process moving forward. There is great variability in applicants’ strengths, needs, and financial status, and allowing the candidates to have an option for in-person or virtual may be the most equitable approach. If a hybrid approach is pursued, national guidance will be imperative to ensure virtual interviewees are not disadvantaged. Increased vigilance to ensure objectivity in applicant evaluations will be important, especially for aspects like “fit” that will be easier to assess for those who opt for in-person interviews.

Conclusions and recommendations

There are advantages and disadvantages associated with residency recruitment whether virtual or in-person, which have been thrust into the spotlight given the COVID-19 pandemic. Evaluating lessons learned during the past 2 recruitment cycles provides an excellent baseline for moving the residency process forward, and residency personnel should be willing to adjust their historical processes to better meet the needs of the hosting organizations, residency personnel, and applicants. Our recommendations to improve the residency process for programs and applicants are outlined in Table 1. In addition, we implore national organizations and the residency governing bodies to support program administration in these efforts, providing guidance for virtual or hybrid recruitment and interviews moving forward. By supporting programs and applicants in this manner, we believe that we can move residency recruitment and commitment forward into a more equitable, sustainable process for the future.

References

1. ASHP match statistics: the 2022 ASHP match. National Matching Services Inc. Available at: https://natinmatch.com/ashprmp/stats.html. Accessed February 18, 2022.
2. Reed BN, Noel ZR, Heil EL, Shipper AG, Gardner AK. Surveying the selection landscape: a systematic review of processes for selecting post-graduate year 1 pharmacy residents and key implications. J Am Coll Clin Pharm. 2021;4:245–256.
3. Hammond DA, Russell N, Davis NC, et al. Financial costs of pursuing postgraduate residency training. Am J Health Syst Pharm. 2018;75(17):1266–1267.
4. Beckett RD, Linn DD. Development of an evidence-based residency preparation checklist using a Delphi process. Am J Health Syst Pharm. 2020;77(5):356–364.
5. Sweet BV, Kelley KA, Janke KK, et al. Career placement of doctor of pharmacy graduates at eight U.S. Midwestern schools. Am J Pharm Educ. 2015;79(6):88.
6. Webb AJ, Margetal D, Schramm GE, Mordini J. The pharmacy residency program guide to Twitter. J Am Coll Clin Pharm. 2015;4:507–513.
7. Angus SV, Williams CM, Kwan B, et al. Drivers of application inflation: a national survey of internal medicine residents. Am J Med. 2018;131(4):447–452.
8. Sweet ML, Williams CM, Stewart E, et al. Internal medicine residency program responses to the increase of residency applications: differences by program type and characteristics. J Grad Med Educ. 2019;11(6):698–703.
9. ASHP Accreditation Services. Pandemic effects on residency programs: Q&A. American Society of Health-System Pharmacists. Available at: https://www.ashp.org/-/media/assets/professional-development/residencies/docs/pandemic-effects-on-residency-programs.pdf. Accessed February 1, 2022.
10. Phillips BB, Palmer R, Chastain DB, et al. Impact of remote delivery on a pharmacists’ patient care process capstone course on the development of patient work-up skills. J Am Coll Clin Pharm. 2021;4:162–168.
11. Rockney D, Benson CA, Blackburn BG, et al. Virtual recruitment is here to stay: a survey of id fellowship program directors and matched applicants regarding their 2020 virtual recruitment experiences. Open Forum Infect Dis. 2021;8(8):ofab383.
12. Momohi K, Gaibge-Toage BHA, Hardart A, et al. Virtual interviews during covid-19: perspectives of female pelvic medicine and reconstructive surgery program directors. Female Pelvic Med Reconstr Surg. 2021;27(9):575–580.
13. Grova MM, Donohue SJ, Meyers MO, et al. Direct comparison of in-person versus virtual interviews for complex general surgical oncology fellowship in the covid-19 era. Ann Surg Oncol. 2021;28(4):1908–1915.

Mary Joyce B. Wingler, PharmD, Clinical Pharmacy Specialist, Department of Antimicrobial Stewardship, University of Mississippi Medical Center, Jackson, MS

David A. Cretella, PharmD, Clinical Pharmacy Specialist, Department of Antimicrobial Stewardship, Department of Medicine, University of Mississippi Medical Center, Jackson, MS

Jamie L. Wagner, PharmD, Clinical Associate Professor, Department of Pharmacy Practice, University of Mississippi School of Pharmacy, Jackson, MS

Katie E. Barber, PharmD, Associate Professor, Department of Pharmacy Practice, University of Mississippi School of Pharmacy, Jackson, MS

P. Brandon Bookstaver, PharmD, Associate Professor, PGY-1 and PGY-2 Residency Program Director, and Fellowship Program Director, University of South Carolina College of Pharmacy, Prisma Health Richland Hospital, Columbia, SC

Bruce M. Jones, PharmD, Infectious Diseases Clinical Pharmacy Specialist, Department of Pharmacy, St. Joseph’s/Candler Health System, Savannah, GA

Christopher M. Bland, PharmD, Clinical Professor and Clinical Pharmacy Specialist, University of Georgia College of Pharmacy, St. Joseph’s/Candler Health System, Savannah, GA

Elizabeth W. Covington, PharmD, Assistant Professor of Pharmacy Practice, Department of Pharmacy Practice, Samford University McWhorter School of Pharmacy, Birmingham, AL

Maicuc Tran, PharmD, Internal Medicine Clinical Pharmacy Specialist and PGY-1 Residency Program Director, Department of Pharmacy, Memorial Hermann Memorial City Medical Center, Houston, TX

Stefanie A. Stramel, PharmD, Clinical Pharmacy Specialist, Department of Pharmacy, Memorial Hermann Memorial City Medical Center, Houston, TX

Darrell Childress, PharmD, Infectious Diseases Clinical Pharmacist and PGY-1 Residency Program Director, Department of Pharmacy, East Alabama Medical Center, Opelika, AL

Michelle Turner, PharmD, Clinical Coordinator and PGY-1 Residency Program Director, Department of Pharmacy, Cone Health, Moses Cone Hospital, Greensboro, NC

Lauren Freeman, PharmD, Infectious Diseases Clinical Pharmacist, Department of Pharmacy Services, WVU Medicine J.W. Ruby Memorial Hospital, Morgantown, WV

Michelle Turner, PharmD, Associate Professor and PGY-2 Residency Program Director, Department of Pharmacy Practice, University of Mississippi School of Pharmacy, University of Mississippi Medical Center, Jackson, MS