

Residency application screening tools: A survey of academic medical centers

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The 2014 ASHP Resident Match results revealed a wide gap between the number of residency positions available and the number of residency applicants.¹ This disparity has continued despite efforts to increase the number of residency positions available. With over 4000 Match applicants in 2014, a total of 2640 ASHP-accredited postgraduate year 1 (PGY1) residency positions were filled,¹ a 47% increase compared with the number of Match-filled PGY1 positions in 2010.² Despite the steady increase in available programs and program positions, 36% of Match participants who applied for PGY1 positions were unsuccessful in matching with a program for the 2014–15 pharmacy residency year.

While it is challenging for residency candidates to navigate through this process, the increasing number of applicants can make it overwhelming for institutions to select potential candidates for onsite interviews. Many candidates have had similar academic, professional, and extracur-

Purpose. The current use and content of screening tools utilized by ASHP-accredited pharmacy residency programs were assessed.

Methods. A survey consisting of 19 questions assessing residency programs and the screening of pharmacy residency program applicants was e-mailed to residency directors of 362 pharmacy residency programs at 105 University HealthSystem Consortium (UHC)-member institutions. Questions gathered general program demographic information, data related to applicant growth from residency years 2010–11 to 2011–12, and information about the residency screening processes currently used.

Results. Responses were received from 73 residency program sites (69.5%) of the 105 UHC-member institutions to whom the e-mail was sent. Many sites used screening tools to calculate applicants' scores and then determined which candidates to invite for an onsite interview based on

applicants' scores and group discussion. Seventy-eight percent ($n = 57$) of the 73 responding institutions reported the use of a screening tool or rubric to select applicants to invite for onsite interviews. The most common method of evaluation was individual applicant review before meeting as a group to discuss candidate selection. The most important factor for determining which residency candidate to interview was the overall impression based on the candidate's curriculum vitae (CV) and letters of recommendation.

Conclusion. Most residency programs in UHC-member hospitals used a screening tool to determine which applicants to invite for an onsite interview. The most important factor for determining which residency candidate to interview was the overall impression based on the candidate's CV and letters of recommendation.

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ricular experiences throughout pharmacy school, and it can be difficult to differentiate the candidates who may be a better fit for a particular pro-

gram. This process is especially challenging when a residency selection committee is tasked with reviewing application material for candidates

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who come from unfamiliar training backgrounds (i.e., out-of-state or new colleges of pharmacy).

To differentiate among candidates, many residency programs use quantitative and qualitative analysis mechanisms to screen residency program applications.³ Some programs have transitioned from using a paper-based approach with screening tools to using electronic methods for improved efficiency and ease of use.⁴ Applicant screening tools can compare a variety of residents' characteristics to identify who would best fit a particular residency program. These tools can enhance the selection of candidates who can be invited for onsite interviews. In order to assess the current use and content of screening tools utilized by ASHP-accredited pharmacy residency programs, an electronic survey was conducted across University HealthSystem Consortium (UHC)-member hospitals.

Methods

UHC is a collaboration of academic medical centers and affiliate hospitals across the United States, many of which support PGY1 residency programs. The UHC Professional Development and Workforce Committee, formerly the UHC Pharmacy Council Research and Education Committee, serves as a central coordinating body to promote and conduct practice-based outcomes research related to professional development of the pharmacy workforce. This committee developed, distributed, and analyzed the results of this survey.

This survey consisted of 19 questions assessing residency programs and their screening of pharmacy residency program applicants. Nine questions gathered general program demographic information as well as data related to applicant growth from residency years 2010–11 to 2011–12. The final 10 questions gathered information about the residency

screening processes currently used at the respondents' institutions. Open-ended follow-up questions were also included in the survey, allowing respondents to provide descriptive information specific to their institution's residency screening process.

In January 2012, an e-mail was sent to all 362 PGY1 and PGY2 residency program directors from the 105 UHC-member hospitals across the United States. The e-mail contained a link that connected the recipient to a secure webpage that contained the survey. The survey was available via this link for two weeks. Descriptive statistics were used to analyze the collected data.

Results

Responses were received from 73 residency program sites (69.5%) of the 105 UHC-member institutions to whom the e-mail was sent. These completed surveys represented 78 (21.5%) of the 362 pharmacy residency sites offered in UHC-member institutions. The mean \pm S.D. patient capacity of the respondents' institutions was 673 ± 262 licensed beds. Respondents' programs had a mean \pm S.D. of 5 ± 2.9 residency positions available. Of the 73 responding programs, 55 (75%) had some type of PGY2 residency program, including critical care (84%, $n = 46$), oncology (67%, $n = 37$), infectious diseases (45%, $n = 25$), and transplantation (29%, $n = 16$).

Residency applicants. Survey respondents reported receiving 5675 applications for the 355 total positions available for the 2011–12 residency year (Table 1). The mean \pm S.D. number of applications received by each institution was 78 ± 50 (median, 67 applications), and the mean \pm S.D. number of applications for each available position was 22 ± 8 (median, 14 applications). Sites reported a 22% increase in the number of pharmacy residency applications from the 2010–11 residency year to the 2011–12 residency year but only



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an 8% increase in the number of onsite interviews offered to candidates.

Screening tools. Seventy-eight percent ($n = 57$) of the 73 responding institutions reported the use of a screening tool or rubric to select applicants to invite for onsite interviews. Eighty-eight percent ($n = 64$) had more than one person review an applicant's file (median, three reviewers). Fifty-two percent ($n = 38$) of the respond-

Table 1.
Residency Program Characteristics

Program Size (No. Residents)	No. Programs	No. Applications	No. Positions	No. Applications per Position
≤4	40	2118	118	17.9
5–8	26	2512	156	16.1
≥9	7	1045	81	12.9
Total	73	5675	355	15.9

Table 2.
Factors Considered in Screening Residency Applicants (*n* = 73)^a

Factor	Mean ± S.D. Likert Scale Score ^b
Overall impression (based on CV and letters of recommendation)	1.44 ± 0.92
Letters of recommendation	1.89 ± 0.92
Letter of intent	2.20 ± 1.04
Quality of clerkship rotations	2.30 ± 1.11
Leadership role (office held in a professional organization)	2.35 ± 1.44
Work experience in hospital setting	2.36 ± 0.92
Grade point average	2.68 ± 0.90
Publications and poster presentations	2.68 ± 0.89
Membership in professional organizations	2.90 ± 0.95
Involvement in research	2.99 ± 0.97
Honors/awards/scholarships	3.06 ± 0.90
Volunteer experience	3.33 ± 0.89
College of pharmacy school attended	3.42 ± 1.24
Degrees in addition to Pharm.D. (e.g., B.S., M.B.A.)	3.46 ± 1.00
Work experience in outpatient or community setting	3.61 ± 0.92

^aCV = curriculum vitae, Pharm.D. = doctor of pharmacy, B.S. = bachelor of science, M.B.A. = master of business administration.

^bResponses based on a 5-point Likert scale where 1 = most important, 2 = somewhat important, 3 = neutral, 4 = somewhat less important, and 5 = least important.

ing institutions involved residents in the screening process, with most residents fully participating in the review, discussion, and final decision of applicants invited for interviews.

The most common method of evaluation was individual applicant review before meeting as a group to discuss candidate selection. Many sites used screening tools to calculate applicants' scores and then determined which candidates to invite for an onsite interview based on scoring and group discussion. In many cases, residency program

directors were mentioned as making the final recommendation of which applicants received invitations for interviews.

A mean ± S.D. of 26 ± 15 applicants were invited for an onsite interview for the 2011–12 residency year, compared with 24 ± 18 applicants for the 2010–11 residency year, representing an 8% increase in the number of applicants granted onsite interviews. Sixty-three percent of survey respondents (*n* = 46) indicated that they have changed their screening process over the past few

years, and 71% (*n* = 52) reported that they evaluate their screening process annually.

Factors influencing applicant selection. Based on survey responses, objective information gathered from an applicant screening tool determined the overall compatibility of prospective residents and helped guide the selection of candidates invited for onsite interviews. The factors that institutions used for applicant screening did vary, but the most important factor for determining which residency candidate to interview was the overall impression based on the candidate's curriculum vitae (CV) and letters of recommendation (Table 2). Many respondents distinguished between two similar candidates by more closely reviewing each applicant's letter of intent, leadership activities, and extracurricular activities; direct conversation with persons who wrote letters of recommendation; and subjective information gathered during face-to-face interactions.

Discussion

The 22% increase in residency applicants at surveyed sites from 2010–11 to 2011–12 residency years can be explained by several factors, including uncertainty in the job market, increases in the number of pharmacy students graduating each year, and continued advocacy by professional pharmacy organizations to pursue postgraduate training.⁵ It is concerning that even with a 22% increase in the number of residency applicants,

the number of candidates invited for interviews increased by only 8%. With the competitive nature of the residency application process and the lack of resources for residency sites to increase interview invitations over the past few years, a general application screening tool to determine which candidates to interview has become a valuable resource for pharmacy residency programs. Although many institutions surveyed already had a screening process in place, 44% ($n = 32$) stated that they would be interested in adopting a standardized rubric or screening tool. With the advent of the Pharmacy Online Residency Centralized Application System⁶ and more standardization of the residency application process, a standardized screening tool may have a significant role in residency programs.

A continuous quality-improvement process can help tailor a screening rubric to meet a specific program's needs. Seventy-one percent of the survey respondents ($n = 52$) evaluated their screening tools annually. This review process has allowed programs to develop, increase, and incorporate new forms of evaluation, such as telephone screening interviews and assessment of writing samples.

The characteristics valued most by residency program directors in identifying qualified candidates included the overall impression based on a CV and letters of recommendation and the letters of recommendation independently. Letter of intent, quality of clerkship rotations, leadership roles, and work experience in a hospital setting were also highly valued. These results are similar to the characteristics identified by a previous survey in which letters of recommendation,

previous work experience, and experience with high-level practitioners (reflective of quality of clerkship rotation experience) were considered by 97–100% of respondents to be important or critical factors in deciding which residency candidates were granted onsite interviews.⁵

Grade point average was not among the characteristics that programs highly valued. This information contrasts with previously published surveys results, which found that 95–99% of residency programs considered pharmacy school grades important or critical.⁵ While respondents recognized that involvement in research, publications, and poster presentations may be beneficial attributes, not many candidates have these experiences; therefore, emphasis is not usually placed on these activities.

When asked about the characteristics that programs use as tiebreakers for two equally qualified candidates, many program directors indicated that they turned to the characteristics that were valued the least in their initial review of application materials. Some respondents mentioned looking at colleges of pharmacy attended as one of their deciding factors, giving priority to highly ranked schools and candidates from schools of close proximity, suggesting a geographic bias in selecting applicants for an on-site interview. Programs also placed emphasis on other unique qualities such as research experience and national awards.

This study had several limitations. The responses to the survey questions were predominantly based on the opinions of the individual residency program directors. These opinions may not be reflective of all individuals involved in the application

review process for each program. In addition, five respondents with both PGY1 and PGY2 residency programs provided two responses to the survey. In these cases, responses to some of the survey questions were screened and combined so that one entry was available for each responding institution. Lastly, while the response rate to this survey (69.5%) was nearly twice as high as that of recently published similar surveys,⁵ many pharmacy residency programs were not represented in the results, including sites with non-ASHP-accredited PGY1 and PGY2 programs.

Conclusion

Most residency programs in UHC-member hospitals used a screening tool to determine which applicants to invite for an onsite interview. The most important factor for determining which residency candidate to interview was the overall impression based on the candidate's CV and letters of recommendation.

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