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Assessment of postgraduate year two pharmacy residency programs within the Veterans Affairs healthcare system

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Abstract

Purpose—Despite the increasing importance placed on advanced training for clinical pharmacists, literature describing postgraduate year two (PGY2) residency opportunities is limited. The objective of this study was to describe characteristics of PGY2 programs within the Veterans Affairs (VA) healthcare system.

Methods—An online survey addressing attributes of PGY2 residency programs was electronically distributed to VA residency program directors (RPDs).

Results—Responses from 27 (32.9%) VA PGY2 residency programs were included, representing 11 PGY2 specialties. Growth and recruitment trends were similar across programs, with most programs projecting additional expansion. Staffing requirements were uncommon, but opportunities to precept and earn teaching certificates were prevalent. RPDs had been licensed pharmacists on average of 16.9 years, and most had at least one advanced certification. The majority of programs had a formal residency advisory committee and required preceptors to attend regular development meetings.

Conclusions—Although multiple postgraduate specialties were represented, the requirements and opportunities available for PGY2 pharmacy residents were similar across VA facilities. By comparing residency programs in a nationally integrated healthcare system, this study may

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promote growth of existing PGY2 programs, facilitate the establishment of new programs, and provide a framework for prospective residents to evaluate programs of interest.

Keywords

pharmacy residency; education; specialty training; teaching

Background

Over the last decade, professional pharmacy organizations have increasingly emphasized the importance of advanced training for clinical pharmacists. For example, both the American Society of Health-System Pharmacists (ASHP) and the American College of Clinical Pharmacy (ACCP) recommend all pharmacists providing specialized care complete both a generalized postgraduate year 1 (PGY1) residency and an advanced postgraduate year 2 (PGY2) residency in a focused practice area.¹⁻³ Moreover, ACCP suggests two years of postgraduate training be mandatory for appointment as an assistant professor at a school or college of pharmacy.⁴

Opportunities for advanced training include 19 different PGY2 specialties currently recognized by ASHP.^{1,5} In 2013, there were 537 ASHP-accredited PGY2 programs with 695 available residency positions, representing a 57.6% increase in the total number PGY2 programs from 2010.⁶ Notably, approximately 15% of these programs were supported by Veterans Affairs (VA) medical centers.⁷

Despite this recent impetus, however, most studies have only focused on specific aspects of PGY2 programs, such as developing a PGY2 teaching curriculum, implementing an academia or medical writing rotation, or establishing a VA outpatient ambulatory PGY2 program.⁸⁻¹³ To our knowledge, only one previous study has compared the global attributes of PGY2 programs.¹⁴ However, only programs with an emphasis on academia were included and the practice setting (community hospital, academic medical center, federal institution, etc.) was not described. Because VA medical centers support a sizeable number of PGY2 residencies, the objective of the present study was to describe general characteristics of programs available within the VA healthcare system.

Methods

This study was a national cross-sectional survey of PGY2 residency programs within the VA healthcare system. A comprehensive questionnaire was adapted from previously published surveys examining demographics of PGY1 residency programs to more adequately reflect characteristics specific to PGY2 VA residency programs.^{15, 16} The survey contained questions addressing program demographics; resident recruitment, rotations and learning experiences; staffing, research, and teaching requirements; and program director/preceptor attributes. Questions were reviewed for face and content validity by the local and national VA Residency Advisory Boards.

Selectsurvey.Net (v4.114.00, ClassApps, Kansas City Missouri) was used to create a secure online survey. Concurrently, 82 residency programs were identified using the ASHP

directory of PGY2 programs available at VA institutions during the 2012-2013 residency cycle, then cross-referenced with the VA residency program director (RPD) listserv to ensure completeness. On January 1, 2014, the study survey was distributed electronically to the RPDs of these 82 VA PGY2 programs. The survey remained open until January 31, 2014, with reminder emails sent 14 and 28 days after initial contact. Responses received from RPDs of fellowship programs, non-traditional residencies or combination PGY1/PGY2 programs were excluded. All other responses were exported to Microsoft Excel 2010 (Microsoft Corp, Redmond, WA) where descriptive statistics were calculated. If multiple survey entries were received for a given program, only the most complete entry was included in the final analysis.

Results

Program Demographics

Of the 82 VA PGY2 programs contacted, survey responses were received from 27 (32.9%) programs, representing 21 unique institutions in 16 states across all geographic regions of the continental United States (US). Eleven ASHP recognized PGY2 specialties were represented in this study, providing 42 total PGY2 resident positions (Table 1). Two-thirds of programs had one PGY2 resident position, while the remaining programs supported two to five PGY2 residents. Over the previous two years, 11 (40.7%) programs added a total of 16 PGY2 positions (median 1 position, range 1-3 positions). No programs removed any positions. Four (14.8%) programs planned to add at least one PGY2 position in the next five years, for a total of 5 new positions. Conversely, two (7.4%) programs each planned to remove one position in the next 5 years; of these, one intended to transition to a PGY1/PGY2 combination program. Of the responding programs, 17 (63.0%) were fully accredited by ASHP, 9 (33.3%) had received candidate status, and 1 (3.7%) reported no ASHP accreditation.

Recruitment

For the 2012-2013 recruitment cycle, 23 programs (85.2%) filled at least 1 PGY2 position through the early commitment process, where a current PGY1 resident was internally selected for the available second-year position. For remaining open positions, 20 (74.1%) programs used the Pharmacy Online Residency Centralized Application Service (PhORCAST™) for the recruitment process. Ten (37.0%) programs reported an increase and two (7.4%) reported a decrease in the number of applicants compared to the previous year. Programs received an average of 4.2 ($\pm$ 3.1) applications, interviewed 2.8 ($\pm$ 2.1) applicants, and ranked 84.5% of interviewed candidates during the recruitment cycle. Of the five programs that had unfilled positions remaining after the annual ASHP Resident Matching Program (the “Match”), three filled these positions through the post-Match process. One program lost funding and did not pursue a candidate in the post-Match process.

Rotations & Learning Experiences

Rotation experiences varied in length, although the most frequently used method for scheduling rotations was by calendar month in nine (33.3%) programs. The majority (n=21, 77.8%) of programs offered rotations off-site, which include other hospitals (n=15, 55.6%),

schools or colleges of pharmacy (n=9, 33.3%), or another VA facility (n=5, 18.5%). Residents either self-selected rotations based on their preferred practice areas (n=11, 40.7%) or were assigned rotations by the RPD based on interests expressed during their initial self-evaluations (n=11, 40.7%). Less often, rotations were assigned based on residents' preferred preceptors (n=4, 14.8%). Table 2 lists additional learning experiences available to PGY2 residents. Over half (n=14, 51.9%) of programs required resident involvement in committees throughout the year, although five (18.5%) offered residents the opportunity to chair a committee meeting.

Staffing, Research, & Teaching Requirements

Six (22.2%) programs mandated a weekend staffing requirement for PGY2 residents, ranging from 8-16 hours monthly at a minimum. No programs required residents to work evening or holiday shifts. Moreover, seven (33.3%) institutions allowed PGY2 residents to moonlight within the medical center's pharmacy.

Programs primarily allowed residents to choose their PGY2 residency research topic from a pre-determined list (n=9, 33.3%), to formulate their own research question (n=4, 14.8%), or use either of these approaches (n=10, 37.0%). Most programs (n=24, 88.9%) provided residents the opportunity to present their research project during the year. Common venues for disseminating results included the ASHP Midyear Clinical Meeting (n=14, 51.9%) and each program's respective regional residency conference (n=17, 63.0%).

Table 3 summarizes available teaching experiences. Many programs required PGY2 residents to deliver an accredited continuing education presentation (n=16, 59.3%) while it was offered as an elective experience for 7 (25.9%) programs. Most (n=23, 85.2%) programs offered PGY2 residents the opportunity to earn a teaching certificate; of those, four (17.4%) programs required residents to participate. PGY2 residents also frequently had the opportunity to work with pharmacy students and PGY1 pharmacy residents, typically in a preceptor or co-preceptor role. Of the 21 individual VAs represented, 17 (81.0%) had an academic affiliation with at least one college or university and nearly all (n=19, 90.5%) institutions offered training for medical residents, suggesting a teaching hospital environment.

Residency Program Director Involvement & Preceptor Requirements

Four RPDs (14.8%) reported serving as a program director prior to their current roles, and for 17 (63.0%), their role as program director was specified in their formal job description. RPD experience as a licensed pharmacist ranged from 7 – 40 years, with an average of 16.9 years ($\pm$ 10.5 years). Most (n=23, 85.2%) had earned at least one advanced certification, the most common of which was board certification as a Pharmacotherapy Specialist (n=17, 63.0%). Other specialty certifications included board certification as an Ambulatory Care or Critical Care pharmacist, advanced qualifications in cardiology or infectious disease, and certification as a geriatric pharmacist, diabetes educator, or pain educator. Eleven (40.7%) directors reported having more than one advanced certification. All RPDs reported spending fewer than 20 hours a week on RPD duties, with about half (n=14, 51.9%) reporting a time

commitment of fewer than 10 hours a week. Additionally, many (n=21, 77.8%) RPDs retained a clinical/specialty role outside of residency responsibilities.

Programs reported frequent contact between RPD and residents throughout the year. All programs required individual meetings between RPDs and residents, while fewer (n=8, 29.6%) required group meetings. The frequency of required individual meetings varied from daily to quarterly, with the latter reported most often (n=15, 55.6%). Most programs (n=24, 88.9%) utilized ResiTrak™ for performance evaluations. Additionally, the majority of programs (n=22, 81.5%) required a formal exit interview with the RPD at the conclusion of the residency year.

Twenty-three (85.2%) residency programs required preceptors to attend regular preceptor development meetings. Meetings ranged in frequency from monthly to biannually, with the most commonly reported meeting requirement being quarterly (n=10, 37.0%). Most programs had no set preceptor-to-resident ratio (n=16, 59.3%). The remaining programs had established a one-to-one ratio for preceptors and residents (n=11, 40.7%). Finally, more than three quarters of the programs (n=21, 77.8%) also had a formal Residency Advisory Committee in place.

Additional Resident Benefits

Nearly all (n=25, 92.6%) programs granted residents educational leave and many (n=22, 81.5%) provided reimbursement for professional expenses such as travel and conference registration. Additionally, two-thirds of programs provided administrative leave for job interviews. One program also provided residents the opportunity to earn a Graduate Certificate in Clinical Pharmacy during their residency year. Ten (37.0%) programs implemented a mentorship program for PGY2 residents to promote professional development. Over half (n=14, 51.9%) of PGY2 programs offered PGY2 residents the opportunity to serve in a leadership position as Chief Resident.

Discussion

By surveying PGY2 residency program directors, this study sought to provide an overall summary of available opportunities within the VA medical system. Among the 27 programs that responded to the survey, all geographic regions and 11 of the 19 ASHP-recognized PGY2 programs were represented.¹⁷ Overall, key characteristics, such as growth rates, staffing responsibilities, and opportunities for educational scholarship, were similar among these VA programs .

To meet the increasing demand for PGY2-trained clinical pharmacists, it would be expected that institutions expand to supply additional training opportunities. Documented growth trends reported by VA PGY2 programs in this study mirror those of institutions nationally, with a steady increase in both the number of added and projected positions.¹⁸ Moreover, the supply of qualified applicants is also expanding, with a demonstrated growth trajectory identified for PGY1 programs both within the VA and among academic health centers.^{15, 19}

Our study findings also suggest that, even with the increasing supply of advanced opportunities, the demand for PGY2 positions remains high. After the 2012-2013 recruitment cycle, only one program that responded to the survey had an unfilled position. Because most programs participated in the early commitment process, fewer positions may be available for individuals seeking PGY2 residencies through the official ASHP Match process. For example, one PGY2 program reported it had never participated in the Match; rather, its PGY2 position had always been internally filled. The implication of this finding, therefore, is that prospective residents who anticipate completing a PGY2 residency may tailor their selection of PGY1 programs to those that also offer a PGY2 program in their area of interest.

Another interesting finding for this study was the minimal staffing commitment required by the VA programs. Additionally, among those programs that had a mandatory component, PGY2 residents were only asked to work non-holiday weekend shifts. This differs significantly from those of PGY1 programs, in which mandatory staffing was a component required by most programs.^{15, 19} While this finding points to a positive quality of life benefit for PGY2 residents, the long-term educational value of a required staffing component for PGY2 residents is unclear. Because clinical pharmacist positions often incorporate a staffing component into their regular role, additional experience as a PGY2 resident may be a valuable asset to future employers. Moreover, hands-on experience for residents navigating a new health system may also supplement and improve the ability of the resident to integrate into the healthcare teams encountered during their core residency rotations. Finally, staffing may represent an example of “service to the institution” that provides advanced training; if the staffing component is removed, other opportunities to prove the value of the training program may need to be implemented. Dual-appointment opportunities, where residents work in a staffing capacity while earning approximate staff pharmacist pay, may be the most ideal option for prospective PGY2 residents, although the financial implications for the institution should be further explored.

Opportunities for educational scholarship were common among the VA PGY2 programs represented in this study. For example, 85% of residents had the option to earn a formal teaching certificate, almost identical to the 86% found by Greco et al. in their description of PGY2 programs with an academic focus.¹⁴ This rate is also similar to the 72.7% reported among PGY1 programs within the VA system.¹⁹ Additionally, VA PGY2 trainees frequently delivered continuing education programs, presented research findings, and worked with pharmacy students, PGY1 residents, and medical residents. The widespread availability of teaching certificate programs, as well as the numerous opportunities to precept learners and disseminate information, suggests that VA programs prioritize experiences that are fundamental in developing educational teaching skills in the second-year resident. Given that completion of a PGY2 residency is now recommended as a requirement for new faculty of colleges of pharmacy, these findings suggest that VA residency programs may be beneficial for individuals pursuing academic appointments.⁴

Finally, responses to a number of questions suggest that VA residency program emphasize a resident-centric approach when designing the annual curriculum. For example, research project topics and clinical rotation assignments frequently incorporated residents'

preferences. Moreover, if a rotation was not available at the parent VA facility, most PGY2 residency programs allowed residents to travel off-site to gain experience in other practice areas. Frequent individual interaction with RPDs and the availability of residency advisory committees and mentor programs also emphasize the importance of a support network during the residency year.

As with other survey-based studies, some limitations must be considered. Although the response rate of 33% is low, it is consistent with or better than other recently published surveys of residency programs.¹⁹⁻²² The low response rate may be less concerning given the consistency of responses received, despite the diversity of programs represented. As the survey was primarily structured in a multiple-choice format, responses were usually restricted to available answer choices that may not have captured important nuances of individual programs. Finally, the present study only evaluated characteristics of VA PGY2 programs, which could limit the generalizability of our results to non-VA programs.

Conclusion

Overall, key characteristics of PGY2 pharmacy residency programs were similar across VA facilities responding to this survey. By providing a comparison of established residency programs in a nationally integrated healthcare system, this study may promote growth of existing PGY2 programs, facilitate the establishment of new programs, and provide a basis for prospective residents to evaluate and compare programs of interest. Although this study was conducted at VA institutions, both VA and non-VA programs could utilize these results as a baseline comparative quality measure, either to identify opportunities for improvement and benchmark change or to highlight unique program offerings.

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Table 1
Postgraduate Year 2 Program Specialties Represented by Responding Veterans Affairs
Medical Centers

Specialty	Programs, n (%)	Positions, n(%)
Ambulatory Care	5 (18.5)	12 (28.6)
Cardiology	2 (7.4)	2 (4.8)
Critical Care	1 (3.7)	1 (2.4)
Drug Information	1 (3.7)	1 (2.4)
Geriatric pharmacy	2 (7.4)	3 (7.1)
Health System Pharmacy Practice Administration *	4 (14.8)	5 (11.9)
Infectious Disease †	4 (14.8)	4 (9.5)
Internal Medicine	1 (3.7)	1 (2.4)
Palliative Care/Pain Management	2 (7.4)	3 (7.1)
Pharmacy Outcomes	1 (3.7)	2 (4.8)
Psychiatric Pharmacy	4 (14.8)	8 (19.0)
Total	27 (100)	42 (100)

* Residents may have the opportunity to obtain a Master's degree.

† Includes one program with "HIV/Infectious Disease" designation.

Table 2
Learning Experiences Offered to PGY2 Residents at Responding Veterans Affairs
Medical Centers (n=27)*

Activity	Programs, n (%)
Case presentation	18 (66.7)
Grand rounds/pharmacotherapy discussion	19 (70.4)
Journal club	20 (74.1)
New drug monograph/evaluation	10 (37.0)
Non-pharmacy presentation	14 (51.9)
Nursing in-service	13 (48.1)
Pharmacy school lecture	14 (51.9)

* Multiple learning opportunities may be available to residents.

Table 3
Opportunities for Teaching Experiences at Responding Veterans Affairs Medical Centers
(n=27)

Opportunity	Programs, n (%)
Presentation of accredited continuing education	23 (85)
Teaching certificate	23 (85)
Student teaching	23 (85)
Preceptor/co-preceptor for pharmacy students	20 (74)
Other interactions with pharmacy students	3 (11)
PGY1 Resident Teaching	27 (100)
Preceptor/co-preceptor for PGY1 residents	16 (59)
Other interactions with PGY1 residents	11 (41)

Abbreviations: PGY1=Postgraduate Year 1.