RESEARCH

Status of Pharmacy Practice Experience Education Programs

Jennifer Danielson, PharmD, MBA,^a Dayl Eccles, PharmD,^a Abigail Kwasnik, PharmD,^b
Karen Craddick, PharmD, BS,^c Andrew K. Heinz, PharmD,^d and Arthur F. Harralson, PharmD^e

^aSchool of Pharmacy, University of Washington, Seattle, Washington

^bSt. Joseph Hospital Franciscan Health-System, Tacoma, Washington

^cUniversity of Washington Medical Center, Seattle, Washington

^dKirk's Pharmacy, Eastonville, Washington

^eBernard J. Dunn School of Pharmacy, Shenandoah University, Winchester, Virginia

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Objective. To assess financial, personnel, and curricular characteristics of US pharmacy practice experiential education programs and follow-up on results of a similar survey conducted in 2001.

Methods. Experiential education directors at 118 accredited US pharmacy colleges and schools were invited to participate in a blinded, Web-based survey in 2011. Aggregate responses were analyzed using descriptive statistics and combined with data obtained from the American Association of Colleges of Pharmacy to assess program demographics, faculty and administrative organizational structure, and financial support.

Results. The number of advanced pharmacy practice experience (APPE) sites had increased by 24% for medium, 50% for large, and 55% for very large colleges and schools. Introductory pharmacy practice experience (IPPE) sites outnumbered APPEs twofold. The average experiential education team included an assistant/associate dean (0.4 full-time equivalent [FTE]), a director (1.0 FTE), assistant/associate director (0.5 FTE), coordinator (0.9 FTE), and multiple administrative assistants (1.3 FTE). Most faculty members (63%-75%) were nontenure track and most coordinators (66%) were staff members. Estimated costs to operate an experiential education program represented a small percentage of the overall expense budget of pharmacy colleges and schools.

Conclusion. To match enrollment growth, pharmacy practice experiential education administrators have expanded their teams, reorganized responsibilities, and found methods to improve cost efficiency. These benchmarks will assist experiential education administrators to plan strategically for future changes.

Keywords: experiential learning, experiential education, advanced pharmacy practice experiences, introductory pharmacy practice experiences, pharmacy faculty, faculty development, administration, organizational structure, financial support, salary, budget

INTRODUCTION

As colleges and schools of pharmacy have implemented the Accreditation Council for Pharmacy Education (ACPE) Standards 2007, the emphasis on experiential education has grown significantly. Experiential education now constitutes 30% of curricula¹ and employs more faculty and staff members within colleges and schools of pharmacy than ever before.² Since the last comprehensive

analysis 10 years ago,³ only a few reports have characterized experiential education programs and the impact of these changes. For instance, select curricular aspects of advanced experiential education were published in 2005.⁴ However, those results were limited to advanced experiential education only and represented pharmacy degree programs meeting the set of accreditation standards in effect prior to Standards 2007. Numerous reports about innovations in introductory pharmacy practice experiences (IPPEs) at individual colleges and schools have been published, but only 1 analysis attempted to systematically characterize introductory experiential education on a national scale.⁵ That report, however, represented only 46 schools or colleges, most of which were not yet compliant with Standards 2007. Therefore, a

Corresponding Author: Jennifer Danielson, PharmD, MBA, University of Washington School of Pharmacy, Box 357630, Office of Professional Pharmacy Education, South Campus Center, Suite 244, 1601 NE Columbia Road, Seattle, WA 98195. Tel: 206-543-1924. Fax: 206-221-2689. E-mail: jendan@uw.edu

comprehensive analysis combining current curricular aspects of both advanced pharmacy practice experiences (APPEs) and IPPEs would contribute to understanding changes that have occurred in experiential education over the past decade.

The impact of increased class sizes and competition from the growing number of colleges and schools on capacity for student placements has been documented.⁶⁻⁸ This effect on capacity was corroborated in a national study of preceptor perspectives in 2008,⁹ as well as in subsequent studies that took a closer look at new methods for determining capacity for placements.¹⁰⁻¹² These analyses demonstrated how capacity is squeezed for certain types of APPEs and IPPEs, especially in non-community pharmacy settings. However, a direct connection of these changes in capacity with reorganization in experiential programs and corresponding changes in budget expenditures has not been elucidated.

In 2001 the total costs associated with experiential programs represented 13% of a college or school's expense budget and average cost per student for APPEs was over \$11,474.³ As IPPE programs have been added and experiential education grew in subsequent years to encompass almost a third of pharmacy curricula, experiential education programs are likely to employ more individuals with new responsibilities which represent a different mix of expenses. In 2008, the American Pharmacists Association urged colleges and schools of pharmacy to dedicate financial and human resources to experiential education proportional to the number of credit hours included in this portion of the curriculum.⁸ Yet, measurement of this growth and the related financial implications have not been closely examined. All of these factors converge to influence the financial outlay required to operate a successful experiential education program. An updated overview of the curricular, personnel, and financial characteristics of experiential education programs is needed to better understand the current state of this sector in pharmacy education and to inform budgetary and strategic planning decisions.

As the number of colleges and schools grew by a third and enrollment increased from 38,902 to 56,841 students over the past 10 years, demand for more practice sites in which to place students has grown exponentially. Explicit accreditation standards mandate preceptor development to support those added sites and ensure their quality. The standards also required implementing greater standardization of IPPEs. Consequently, the workload of faculty and staff members in experiential education has expanded significantly. In 2005, the American Association of Colleges of Pharmacy (AACP) Professional Affairs Committee suggested that colleges and schools of pharmacy adopt

an "administrative team model for delivery of experiential education" and "move toward standardizing titles and program responsibilities for this administrative team."¹³ In fact, specific job descriptions were written and published for the members of this proposed administrative team. Increased administrative requirements were incorporated into these new job descriptions, and the number of individuals working in experiential education grew to accommodate. Yet, this group of faculty members, as represented by the AACP Experiential Education Section membership, is predominantly junior, nontenure-track faculty members.^{2,3} Further analysis is needed to explain the roles and responsibilities of the new experiential education administrative team and to understand why this section of pharmacy faculty members remains relatively inexperienced. The purpose of this analysis was to determine how the organization of experiential education programs and associated costs have changed as curricular emphasis on experiential education expanded, new job responsibilities for faculty and staff members materialized, and pharmacy school enrollment grew in the United States over the last 10 years.

METHODS

A Web-based survey instrument was developed in spring 2011 and approved by the University of Washington Human Subjects Division (ie, institutional review board). The questionnaire used previously by Harralson³ was consulted when designing this survey instrument. Questions selected from the 2001 questionnaire were adapted to reflect current accreditation standards and subsequent published literature regarding structure and requirements of experiential education curricula. In order to compare results over time, categories for class size (small <50, medium 50-100, large 101-150, and very large >150) were kept constant as reported in 2001. The survey was built and administered electronically using Catalyst Web Tools (property of University of Washington Information Technology). Pilot testing with experiential education directors in the Northwest region (including schools in Oregon, Washington, Idaho, Montana, and Wyoming) resulted in some minor editing to the survey instrument. The final survey instrument contained 28 questions (multiple-choice items and some short answer items) that focused on the following general areas: institutional demographics; curricular characteristics of APPEs and IPPEs; faculty members and preceptors; and organization/personnel in experiential education administration. (A copy of the survey instrument is available from the corresponding author.)

The initial invitation to participate occurred in May 2011. The invitation e-mail with link to the survey

instrument was distributed to all experiential education directors (using a contact list purchased from AACP) at 118 US colleges and schools of pharmacy with full or candidate accreditation status.¹⁴ Additional e-mail reminders were sent at 2 and 4 weeks and then again at 3 months, with an initial goal response rate of 70%. In December 2011, the response rate was just over 60%, so a follow-up phone call was made to all colleges and schools to improve the final response. The survey was closed in January 2012. All data gathered were downloaded to Excel for analysis. Because the entire population (not a sample) was surveyed and reasonable response was obtained, descriptive rather than inferential statistics were used to analyze results.

To address anticipated concern that results gathered from the survey would eventually be paired with financial information, informed consent was provided to participants and participation was voluntary. All responses were anonymous to protect participants and any potentially proprietary information shared.

Unlike Harralson's work in 2001, AACP did not grant full access to institutional financial data for this project. Therefore, information about institutional finances as well as faculty salary were obtained from the following AACP Web-based resources available to members: Profile of Pharmacy Faculty 2011-2012,¹⁵ Institutional Research Summary of Financial Data 2010-2011,¹⁶ Pharmacy Faculty Survey Summary Report 2011,¹⁷ and Institutional Research Summary of Financial Data 2011-2012.¹⁸ Data from these sources were extrapolated for use in this analysis. Direct comparison of results with financial information reported in 2001 was not attempted. Because sources of data were different and many of these results were calculated estimates, costs obtained through different methods could not be compared over time. Costs of experiential education are likely to vary across colleges and schools depending on whether they pay preceptors for teaching students or employ shared faculty positions to cover capacity needs. Because a standard model does not exist, calculating total cost for experiential education can be difficult.

To estimate salaries for faculty members who administer experiential education, weighted averages were calculated using means reported in the AACP Profile of Pharmacy Faculty 2011-2012,¹⁵ the first year that salaries for experiential education directors/coordinators were reported. Respondents to that survey reported salaries at the assistant professor rank most often but in differing amounts between private and public schools (private schools: 16% associate or assistant deans, 28% associate professors, 49% assistant professors, and 7% instructors; public schools: 12% associate deans, 17% assistant deans,

10% professors, 12% associate professors, 42% assistant professors, and 7% instructors). Salaries for faculty members at private colleges and schools were higher than for faculty members at public institutions. AACP does not collect staff salaries, so local salary ranges for typical staff positions found in the experiential education office at the University of Washington were used as an estimate of salary for support staff positions.

For public college and school faculty members, the following assumptions were made to estimate average salaries in the experiential education program. Weighting for calculated averages was based on response rates from this survey and the AACP Profile of Pharmacy Faculty (at public institutions).¹⁵ Salaries for associate dean (72%) and assistant dean (28%) positions were combined and an average estimated salary for the associate/assistant dean position was calculated. For the director position, the reported salaries for professors (14%), associate professors (17%), assistant professors (58%), and instructors (11%) were combined and an average salary was calculated. Because the assistant director position was new, the breakdown of various ranks within it was not available. The likelihood that senior faculty members would have entered this newly established position was low, so the average salary for assistant professors was used without further calculation to represent all assistant directors. An estimated staff salary (60%) and average assistant professor salary (40%) were combined to estimate an average salary for coordinators.

To estimate faculty salary at private colleges and schools, similar assumptions and weighting were used. Calculated averages were based on response rates from this survey and the AACP Profile of Pharmacy Faculty (at private institutions).¹⁵ Salaries for associate dean (50%) and assistant dean (50%) were combined for the associate/assistant dean position. For directors, reported salaries for associate professors (33%), assistant professors (59%), and instructors (8%) were combined. Because the predominance of assistant professors at private schools was significant, salary for the assistant director position was assumed to be at this level in its entirety. Again, estimated staff salary (60%) was combined with that for assistant professors (40%) to calculate an average salary for coordinators.

The student population of pharmacy colleges and schools changed significantly since the previous survey (81 schools with 38,902 total enrollment in 2001 vs 118 schools with 56,841 total enrollment in 2011). This 45% increase in population size made direct comparison of results with inferential statistics unnecessary. Still, all colleges and schools were contacted to avoid nonresponse bias in this small population, and a goal response rate of 70% was used in attempt to obtain a census of the entire

target population. The survey was closed at the beginning of January 2012 because class sizes and the number of colleges and schools continued to grow, creating concern that responses received more than 6 months after initial administration of the survey may have no longer accurately represented characteristics of the initial surveyed population.

RESULTS

Eighty-one colleges and schools responded (69% response rate). Comparison of results with the known population of US pharmacy colleges and schools¹⁹ showed that, while the goal response rate of 70% was not achieved, the proportion of responses from public vs private institutions and the breakout of respondents across college and school sizes were similar to the population in many respects (Table 1). Response rates achieved for public institutions (75%) and colleges and schools with medium to large class sizes (72% and 71%, respectively) were sufficient for results to accurately represent these populations. The response rate from colleges and schools with small class size (12%), very large class size (62%), and private institutions in general (54%) did not reach the goal response rate. However, public institutions with medium to large class sizes for which an adequate number of responses were received make up the majority (69%) of all colleges and schools nationally.¹⁹⁻²⁰ Thirty-three respondents (41%) represented institutions associated with academic health centers, which matches the national statistics (ie, 41% of all colleges and schools are associated with academic health centers).²⁰

Program and Curricular Characteristics

Comparing results over time, class sizes were significantly larger in 2011 than in 2001 (Table 2). In 2001, the mean class size was 66.5.³ Ten years later, 55% of respondents reported a class size of 100 or more students, which indicated that the mean class size was likely to be

closer to 100 students. As would be expected with larger class sizes, the number of APPE sites grew overall (Table 2 and Table 4). The number of APPE sites grew 24% for medium, 50% for large, and 55% for very large colleges and schools. Even though, privately funded institutions had more sites in absolute numbers than publicly funded schools for all categories (Table 3 and Table 4), the rate of growth at public institutions was more than that for private institutions (Table 3).

When categorized by type of site, colleges and schools reported having the most APPE sites in community pharmacy (mean, 146 sites), followed by inpatient/health systems (mean, 86 sites), acute care/general medicine (mean, 71 sites), and ambulatory care (mean, 40 sites). The average number of community IPPE sites (mean, 112 sites) was more than twice the number of institutional IPPE sites (mean, 49 sites). Private schools reported more sites in all categories than public institutions (Table 4). Colleges and schools associated with academic health centers reported fewer ambulatory care APPE, community IPPE, and institutional IPPE sites. The number of APPE and IPPE sites by category increased as institution size increased (Table 4).

Faculty and Administrative Organization

The average number of faculty/staff full-time equivalents (FTEs) working in experiential education was highest for medium followed by large- colleges and schools (Table 5). Very large institutions had a lower average FTE, because those institutions reported fewer coordinators. Average FTEs per position were categorized by institution type; however, no significant differences were found. The typical experiential education team included FTE allotments/positions for an assistant/associate dean (mean 0.4 FTE), a director (mean 1.0 FTE), an assistant/associate director (mean 0.5 FTE), a coordinator (mean 0.9 FTE), and multiple administrative assistants (mean 1.3 FTE).

Table 1. Comparison of Institution and Class Size of Colleges and Schools Responding to a Survey on Experiential Pharmacy Education Programs With That of all Pharmacy Colleges and Schools

	Survey Results, n=77 ^a (% of total)	Population Data, ^{17,18} n=118 (% of total)	Comparison (% response)
Institution type			
Public	46 (60)	61 (52)	46/61 (75)
Private	31 (40)	57 (48)	31/57 (54)
Class size			
Small (<50 students)	1 (1)	8 (6)	1/8 (12)
Medium (51–100 students)	34 (44)	47 (40)	34/47 (72)
Large (101–150 students)	24 (31)	34 (29)	24/34 (71)
Very large (>150 students)	18 (24)	29 (25)	18/29 (62)

^a Responses with complete data for this survey question.

Table 2. Comparisons of Program Characteristics of Pharmacy Colleges and Schools by Institution Size

	Small, Median (Range)		Medium, Median (Range)		Large, Median (Range)		Very Large, Median (Range)	
	2001 (n=25)	2011 (n=1)	2001 (n=30)	2011 (n=34)	2001 (n=14)	2011 (n=24)	2001 (n=5)	2011 (n=18)
APPE sites	100 (6-500)	62	150 (10-541)	195 (0-1300)	161 (27-425)	321 (100-930)	168 (150-200)	304 (310-2500)
IPPE sites	–	91	–	100 (35-1600)	–	149 (12-250)	–	132 (20-400)
Full-time faculty ^a	15.5 (0-34)	12	11 (0-42)	10 (0-26)	11 (0-19)	15 (0-60)	10 (10-30)	27.5 (2-75)
% APPE ^b	–	100%	–	100% (0-100)	–	100% (24-100)	–	100% (19-100)
% IPPE ^b	–	50%	–	0% (0-100)	–	20% (0-100)	–	0% (0-100)
Shared/jointly funded faculty ^a	5 (0-19)	1	5 (0-26)	2 (0-50)	7 (0-20)	2 (0-10)	1.5 (1-2)	6 (0-39)
Volunteer faculty ^a	194 (25-1,400)	300	250 (20-836)	250 (1-1000)	250 (90-500)	300 (50-2500)	350 (300-450)	310 (0-1000)
% APPE ^b	–	25%	–	75% (0-100%)	–	90% (40-100%)	–	75% (0-100%)
% IPPE ^b	–	80%	–	45% (7-100%)	–	40% (2-80%)	–	25% (0-66%)
Teaching by residents ^c	43%	0%	70%	27%	50%	46%	33%	28%

Abbreviations: APPE = advanced pharmacy practice experience; IPPE = introductory pharmacy practice experience.

Some n values vary slightly because some respondents did not complete all survey items.

^a Number of faculty members reported who consistently precept students (head count, not FTE).

^b Reported proportion (%) of faculty that precept each type of experience.

^c Percent of respondents that report residents are used as primary preceptors.

Most of the individuals with titles of assistant/associate dean, director, and assistant/associate director were nontenure-track faculty members (63%, 75%, and 63%, respectively), and most of the individuals with titles of coordinator were staff members (66%). In fact, experiential education faculty members in general moved from primarily tenure-track positions (70% in 1982)²¹ to mostly nontenure-track positions (57% in 1998, 64% in 2001),^{3,22} and then to nontenure-track positions mixed with non-faculty staff positions (12% tenure, 68% non-tenure, and 20% staff in 2011). Comparing public to private institutions, the only distinguishable difference was that slightly more public colleges and schools (56%) employed staff members in experiential education positions than did private colleges and schools (48%). No distinguishable difference was seen between public and private institutions in the percentage of programs with each position title or the mean FTE devoted to each title.

When asked about primary responsibilities, associate/assistant deans usually provided general program oversight (76%), and administrative assistants usually had responsibility for both APPEs and IPPEs (61%) (Table 5). One third of colleges and schools reported having multiple directors (35%) and coordinators (34%) with responsibilities in both IPPEs and APPEs. In most colleges and schools, directors split their time between IPPEs and APPEs (24%), while associate directors were responsible for IPPEs alone (37%).

The number of fulltime faculty members involved in precepting students decreased slightly for medium-sized colleges and schools but increased significantly for large and very large schools over the 10-year period (Table 2). Nearly all of the fulltime faculty members precepted students on APPEs, and few precepted for IPPEs (Table 2 and Table 3). Since 2001, shared or jointly-funded faculty positions decreased for all but very large schools, while the number of volunteer faculty increased for all schools. For most colleges and schools, the average amount of APPEs precepted by volunteer faculty members was 64%-68%, and the average amount of IPPEs precepted by volunteer faculty members was 81%-87%. Very large colleges and schools reported that a smaller proportion (50%) of APPEs and all (100%) IPPEs were precepted by volunteer faculty members. In all cases, fewer colleges and schools used residents as primary preceptors in 2010 than in 2001.

Financial Support

According to weighted salary estimates plus reported amounts paid to sites and preceptors for precepting students, the costs to operate an experiential program totaled approximately \$1 million (Table 6), an amount lower than that generated by tuition from experiential education

Table 3. Program Characteristics by Institution Type

	Total Median (Range)		Public Median (Range)		Private Median (Range)	
	2001 (n=74)	2011 (n=77)	2001 (n=50)	2011 (n=46)	2001 (n=24)	2011 (n=31)
APPE sites	150 (6–541)	451 (62-2500)	130.5 (6-541)	201 (62-960)	179 (27-500)	250 (99-2500)
IPPE sites	–	149 (12-1600)	–	100 (12-818)	–	149 (20-1600)
Full-time faculty ^a	12 (0 – 42)	14 (0-75)	10 (0 – 42)	12.5 (0-75)	12 (0-34)	14.5 (0-40)
% APPE ^b	–	100% (0-100)	–	100% (0-100)	–	100% (0-100%)
% IPPE ^b	–	0% (0-100)	–	0% (0-100)	–	0% (0-100)
Shared/jointly funded faculty ^a	5 (0 – 26)	2 (0-50)	4 (1 – 26)	2.5 (0-50)	5 (0 – 20)	0 (0-1770)
Volunteer faculty ^a	250 (20 – 1,400)	300 (0-1200)	200 (20 – 837)	300 (0-1200)	300 (25 – 1,400)	250 (0-1000)
% APPE ^b	–	80% (0-100)	–	80% (0-100)	–	75% (0-100)
% IPPE ^b	–	50% (0-100)	–	40% (0-100)	–	40% (0-100)
Teaching by residents ^c	53%	34%	46%	30%	71%	37%

Some n values varied slightly because some respondents did not complete all survey items.

^a Number of faculty members reported who consistently precept students (head count, not FTE).

^b Reported proportion (%) of faculty that precept each type of experience.

^c Percent of respondents that report residents are used as primary preceptors.

courses. Estimated total costs represent only a small percentage (3%-5%) of the overall expense budget, which means experiential education could be considered a revenue generator for many colleges and schools. Private institutions spend slightly more on experiential education as a percentage of their expense budgets than do public colleges and schools. These results are supported by information from AACP's financial reports in 2011-2012¹⁷ that show colleges and schools spend a negligible amount of their budget on IPPEs (mean 0.4%, median 0%) and approximately 2.7% (mean and median) of their budget on APPEs.

The financial support paid to sites and preceptors for precepting students varied (Table 6). Various mechanisms for payment to external stakeholders exist (ie, direct payments to sites, set annual stipends paid to preceptors, and payments based on a per student basis). Some colleges and schools did not pay sites or preceptors at all for precepting.¹⁶

DISCUSSION

Trends identified, estimates calculated, and conclusions drawn from these results—the first to characterize changes in experiential education administration in recent years—are a source of systematic and transparent information that institutions and administrators can use for assessing and benchmarking program effectiveness. Results of this survey can be most accurately generalized to public institutions, colleges and schools of pharmacy with medium to large class sizes, and colleges and schools of pharmacy associated with academic health centers—all of which represent a large proportion of US pharmacy colleges and schools. Because class sizes have grown and few small colleges and schools still exist, limitations to generalizing results (because of low response rate) should not negate the impact of these results for the majority of institutions. Response rates for private (54%) and very large institutions (62%) are large enough to at least suggest trends. The validity of these results is further

Table 4. Summary of Required APPE/IPPE Sites by Institution Type and Size

	Institution Type		Class Size			
	Public, Mean (n=44)	Private, Mean (n=32)	Small, (n=1)	Medium, Mean (n=34)	Large, Mean (n=24)	Very Large, Mean (n=18)
APPEs						
Community	124	177	40	128	130	207
Inpatient/health system	53	133	25	46	68	201
Acute care/general medicine	47	103	27	47	47	158
Ambulatory care	28	55	8	39	36	45
IPPEs						
Community	114	152	33	137	83	113
Institutional	50	67	31	53	41	49

Table 5. Experiential Education Program Faculty and Staff (FTE) by Institution Size

Title and Primary Job Responsibility				
	Small (n=1)	Medium, Mean (Range) (n=34)	Large, Mean (Range) (n=24)	Very Large, Mean (Range) (n=18)
Assoc/assist dean (n=34) general program oversight (76%)	0	0.3 (0-1)	0.6 (0-1)	0.3 (0-1)
Director (n=66) multiple positions (35%) with multiple responsibilities and general oversight (29%)	0.5	1.1 (0-2)	0.8 (0-2)	1.2 (0-2.5)
Assoc/assist director (n=35) Multiple positions (26%) and mostly responsible for IPPEs (37%)	0	0.5 (0-4)	0.4 (0-2)	0.6 (0-2)
Coordinator/manager (n=43) Multiple positions (34%) with responsibilities split between APPE/IPPE (34%)	1	1.0 (0-2)	1.1 (0-4)	0.5 (0-4)
Administrative/support staff (n=67) multiple positions (27%) with responsibilities split between APPE/IPPE (61%)	0.5	1.1 (0-2.5)	1.6 (0-3.5)	1.4 (0-3)
Total	2.0	5.9	4.5	4

supported by consistency with other published evidence within the past 10 years.²

Concerns about shrinking capacity for hospital-based practice experience sites was first raised in 2007,⁷ and our results confirm those concerns. The overabundance of community pharmacy practice sites and relative lack of other practice sites reported in this survey is supported by other published analyses.^{6-8,20,22} Interestingly, the number of ambulatory care sites was lowest among all colleges and schools, which would suggest that challenges to capacity of clinic-based, ambulatory care sites are emerging. The overabundance of community sites may correspond with current practice models and the majority of job opportunities for our students, but lack of ambulatory care sites means that efforts to integrate clinical pharmacists into primary care and the medical home may be stunted. Further inquiry into this potential threat to collaborative practice and the solvency of experiential education programs is warranted. The fact that private institutions reported more APPE and IPPE sites than did

public institutions and they claimed larger average payment to sites and preceptors leads to speculation that financial incentives for precepting students are influencing site capacity. Consequently, we suggest colleges and schools with the financial means consider putting resources into supporting faculty members and preceptors in clinic settings. Doing so will not only solve capacity problems, but may also influence practice patterns.

In small to medium-sized colleges and schools, the number of full-time and shared/jointly funded faculty members who precept decreased while the number of volunteer faculty members increased. At the same time, the largest colleges and schools increased both full-time and shared/jointly funded faculty members who precept, while they decreased the number of volunteer faculty members. These trends suggest that colleges and schools financially squeezed by lower enrollments rely more on volunteer faculty members to meet student placement needs. Also, colleges and schools that generate additional tuition revenue from increased enrollment are using those

Table 6. Average Experiential Education Program Costs by Institution Type

	Public		Private	
	No.	Cost, \$	No.	Cost, \$
Support to sites/preceptors ^a				
Payments to sites	30	251,510	20	268,734
Payments to preceptors (stipends)	37	66,457	14	144,401
Payments to sites/preceptors (on per rotation basis)	41	203,175	19	225,204
Estimated average salary expense (faculty and staff) ^b		403,969 ^c		416,582 ^d
Total cost for experiential education (excluding costs for supplies and equipment)		925,111		1,054,921
Cost per student (class size 100)		9,251.11		10,549.21

^a Reported costs and n's from AACP Summary of Financial Data 2010-2011.¹⁶

^b Excludes salaries for fulltime and shared/joint faculty members who precept students.

^c Based on weighted mean FTE (plus 30% benefits): assoc/assist dean \$77,990; director \$127,071; assist director \$66,751; coordinator \$74,478; staff \$ 57,679.

^d Based on weighted mean FTE (plus 30% benefits): assoc/assist dean \$71,754; director \$141,802; assist director \$69,292; coordinator \$76,055; staff \$57,679.

resources for precepting needs. These trends appear fiscally prudent; however, using volunteer faculty members often puts greater strain on experiential education administrators because these faculty members often have significant training and development needs. The cost savings from using volunteer instead of paid faculty members may not cover the need for increased preceptor development resources. We recommend that colleges and schools consider appropriately resourcing the experiential education program for preceptor development before adding more volunteer preceptors. Additional revenue generated by increased enrollment should be used to hire more full-time and shared/jointly funded faculty members to address capacity needs.

Growth in residency offerings has not kept pace with the increased number of pharmacy graduates, resulting in a larger number of unmatched residency applicants.²³⁻²⁴ However, the rationale for reducing the amount of resident precepting as seen across many colleges and schools in this analysis is unclear. More residents may be co-precepting than serving as the sole preceptor as compared to 10 years ago. Given that demand for more preceptors is so high, however, we would have expected an increase rather than a decrease in the number of residents serving as preceptors. Decreased reliance on shared or jointly funded faculty members for precepting seen across all colleges and schools, except the largest ones, also seems counterintuitive. These results support the notion that colleges and schools could be relying more on volunteer faculty members to meet increased student placement needs.

Larger colleges and schools reported relatively lower capacity across all categories of sites, and they claimed an increase in both full-time faculty members and residents who precept. In fact, residents were twice as likely to precept at larger schools than others. Very large schools reported a dramatic increase in shared or jointly funded faculty members who precept. Still, increases in the average number of full-time faculty members (~15%-20%) were not proportional to the increase in class size (~25%-50%). These differences would suggest that larger colleges and schools use larger student-to-preceptor ratios. They may also rely on residents and shared/jointly funded faculty members to meet increased capacity needs.

The survey results demonstrate that new personnel have been added to accommodate the 46% growth in enrollment (38,902 in 2001 to 56,841 in 2010¹⁷). Comparing these results to previously published data,^{3,21,23} the team administering experiential programs grew from 1-2 faculty members with an administrative assistant to a team of multiple faculty administrators and support staff members with various ranks and titles. In 1998, experiential programs were primarily organized under the supervision

of a single faculty member with the title of coordinator,²³ but by 2001 the predominant title had become director.³ In 2011, the majority of coordinators were staff positions instead of faculty positions, and most institutions have recognized the importance of experiential education by either promoting a faculty member to a dean-level position or hired an individual at that level to lead the program. Timing for adding assistant/associate directors and the predominance of IPPEs as their primary responsibility would suggest that these positions were created to expand IPPE offerings to meet accreditation requirements.¹ All of this expansion provides evidence that recommendations made in 2005 by the AACP Professional Affairs Committee¹³ about appropriately resourcing experiential education programs may be happening. This growth, however, was not compared to overall growth in the number of faculty members that colleges and schools employ. Therefore, these results support but may not confirm that experiential education units are gaining the “appreciation and resource support needed to be fully effective.”²⁵

The number of tenure-track faculty members in experiential education has been cut by two thirds, and the amount of nontenure-track faculty members has doubled since 1982. This dramatic switch in the nature of these faculty positions, reinforces the concept that experiential education continues to be regarded as “quasi-academic.”²⁵ Still, the apparent increase in staff positions recognizes the administrative nature of the work involved and the need for cost-effective resource management.

Unfortunately, comparison of financial information between 2001 and 2011 was not possible. Collecting survey responses anonymously protected participants from sharing potentially proprietary information but prevented direct connection of program characteristics to financial data. Extrapolated data from AACP resources was useful in projecting average expenses for the typical experiential education office, but AACP financial reporting is not broken out by college/school or class size, so connecting costs to class size could not be done. Never the less, some general comparisons could be made. Comparing overall estimates to historical data suggests total costs to operate an experiential education program grew over time. The proportion they represent of a pharmacy college or school’s budget, however, was smaller than expected. These results were surprising given that the number of experiential education faculty and staff members increased. This result suggests that college and school expenses overall have increased while the costs of experiential education have merely kept pace rather than increased disproportionately.

Considering experiential education has expanded to represent 30% of the curriculum, the tuition dollars

generated are in the magnitude of millions. Depending on indirect costs allocated to upper administration within an institution, we suspect these tuition dollars kept within a college or school surpass projected average cost per student. While most experiential education faculty members do not bring in significant external research funds, these faculty members do generate internal revenue support for a pharmacy college or school's operations. These results suggest that the return on investment for experiential education is significant and rivals that of other faculty members and departments that bring in research dollars. This financial offset should be appropriately recognized for its value and contribution to the fiscal success of each institution. Further investigation is needed to determine the magnitude of the revenue to expense differential which would reveal the true return on investment.

Limitations to the validity and applicability of these results include use of AACP financial reporting^{14,16} and the AACP Profile of Pharmacy Faculty.¹³ AACP financial reporting is voluntary and response rates are typically low, so costs reported here are not representative of all colleges and schools. Often, private schools consider such information to be proprietary, so financial data from these institutions were missing and especially problematic to generalize. AACP salary data are based on self-reported information, which has inherent flaws. Calculations for estimated salary expenses were based on assumptions about the average experiential education office. Extrapolating the average staff salary information from one to all schools may not be accurate.

Average salary costs estimated here should not be used for setting salary expectations of individual faculty members. These averages were based on calculations that did not represent actual individuals. In reality, faculty and staff members in experiential education often have responsibilities in multiple departments and are rarely part-time employees—a mix that is unique to each college/school and individual. Also, salaries for other faculty members who precept students but do not administer experiential education were not included in this report. To fully account for the costs to a college or school for experiential education, salaries for full-time faculty members, shared/joint faculty members, and residents who precept would be needed. However, this analysis can serve as a guide for faculty and staff members administering experiential programs to determine return on investment for their office.

CONCLUSION

Experiential education programs have met demands of dramatic enrollment growth with expanded personnel and new job responsibilities, and with cost efficiency. The

2%-4% of a college or school's expense budget that experiential education represents is a positive return on investment. In fact, experiential education often represents a revenue stream for colleges and schools—something for which the faculty members involved should be recognized. Following the example of the largest colleges and schools, this income could be invested in additional faculty members or residents to precept students. Some colleges and schools have increased reliance on volunteer faculty members, but this may or may not represent a cost-efficient strategy when considering the added preceptor development resources they require. Coupled with capacity concerns for the institutional and clinic-based settings, colleges and schools should consider allocating resources for faculty members (full-time or shared) to precept students in these settings rather than overhauling their entire preceptor payment model.

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