

COMMENTARY

Essential Elements for Core Required Advanced Pharmacy Practice Experiences

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Submitted October 31, 2017; accepted January 30, 2019; published May 2019.

Since 2004, concerns and calls for greater quality assurance in experiential education have been published. The Accreditation Council for Pharmacy Education (ACPE) “Standards 2016” provide limited differentiation across the four required practice experiences, and, as such, schools interpret them differently. Both schools and accreditation site visit teams would benefit from a common set of guidance for the required Advanced Pharmacy Practice Experiences (APPEs), so that they can ensure consistency and quality in student experiences across practice sites. To address this need for greater standardization, a taskforce of the American Association of Colleges of Pharmacy (AACP) Experiential Education (EE) Section conducted a peer-reviewed, consensus-building process, including experiential faculty and staff across multiple colleges and schools of pharmacy, to determine a common set of elements that could be used to bring consistency to the experiences and expectations for student learning in practice. Over a two year period, the taskforce reviewed the relevant literature and then drafted and revised the elements through an iterative process which allowed for established EE consortia and members of the EE section to review the draft and provide input for revision. The resulting essential elements presented here can be used to guide faculty and staff within experiential education programs in their quality assurance processes in ensuring students receive consistent experience as part of their education prior to graduation.

INTRODUCTION

The issue of quality in contemporary pharmacy experiential education (EE) was first published in 2004 as a report of the AACP Professional Affairs Committee.¹ In 2008, additional support for measures that defined and

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enhanced EE were published.^{2,3} Since then, pharmacy schools have used multiple methods for measuring and improving the quality of EE.⁴⁻⁸ In fact, quality has been a top ranked concern about EE programs for several years, and calls for metrics to measure quality in EE continue to be published.⁹⁻¹¹

In 2014, work by O’Sullivan and colleagues revealed variability in how schools interpret standards for advanced practice experiences.¹² For instance, researchers detected variability in the types of practice sites schools

use for ambulatory care APPEs (eg, up to 20% of respondents allowed community pharmacies to be categorized as clinics). Their work showed that the amount of time students spend in distribution-related activities (such as order fulfillment) during community- and hospital-based APPEs varies, which begs the question whether these experiences should be primarily direct-patient care. Schools interpret the health-system APPE quite differently with a spread in emphasis across order fulfillment, clinical/patient care, management/administration, and general exposure to operations in the medication use system.¹² This variability across schools highlighted concerns about lack of standardization in required experiences.

The ACPE “Standards 2016” for the entry level Doctor of Pharmacy degree list four core required practice experiences (community pharmacy, ambulatory patient care, hospital/health-system pharmacy, and inpatient general medicine patient care), but does not define them.¹³ Although scholarship to study and standardize these required practice experiences continues,^{14,15} questions remain about whether site visit teams can accurately ascertain if schools are ensuring consistent experiences of sufficient quality across multiple practice sites and thus meeting accreditation standards. As stated in “Standards 2016,” colleges and schools must “employ quality criteria for preceptor and practice facility recruitment and selection as well as set forth expectations and evaluation based on student opportunity to achieve required outcomes.”¹³ A standardized set of essential elements, including practice activities, skills, and/or competencies for what students should be doing on each of the required practice experiences, could form the basis of such quality criteria. Individual pharmacy schools could then use such elements to improve consistency and accountability across practice sites as part of their quality assurance processes. A nationally accepted set of standard essential elements for the required practice experiences would allow ACPE site teams to more consistently assess programmatic quality during accreditation visits.

Development of the Essential Elements

With encouragement from ACPE staff and board members, the AACP EE section appointed a task force in 2015 charged with conducting a peer-reviewed, consensus-building process to develop a set of nationally acceptable, standardized essential elements for the required APPEs. The goal was to produce a set of common, realistic expectations for the four-core required APPE rotations upon which all schools could agree, which would facilitate consistency for all schools to effectively use with their respective practice sites. Though the focus

of this process did not include introductory pharmacy practice experiences (IPPE), a similar process could be used in identifying core elements of IPPE rotations for the Academy in the future.

The chair of the EE section appointed the task force and careful attention was paid to include members representing all regions of the United States. Task force members were evenly distributed across school type (public vs. private, new vs. established) and class size.

Task force members began with the purpose to develop a set of elements that were aspirational (ie, what students “should” be doing) and yet achievable (ie, what students “could” be doing) by most schools within a reasonable amount of time. Because schools have influence but not direct control over practice sites and practice models vary from region to region, we tried to focus primarily on what students “should” do balanced secondarily with what students “could” do to temper concerns about creating a set of criteria unattainable within a reasonable amount of time.

The task force was divided into workgroups—each focusing on one of the core APPEs as required by ACPE such as inpatient general medicine patient care, ambulatory patient care, community pharmacy, and hospital/health system pharmacy. The task force invited each of the experiential consortia known to exist at the time to participate as reviewers. Each of the workgroups began with a literature search for relevant evidence. The committee relied heavily on the EE section “Master Publication List.” The EE scholarship committee originally compiled this list, and it is maintained annually using a systematic search strategy. In addition to a manual search of the *American Journal of Pharmaceutical Education*, members performed a keyword search in PubMed using “students, pharmacy or education, pharmacy” and “experien*.mp” and in EMBASE using “pharmacy student” and “education or experien*.mp.” Articles were included if they involved any aspect of IPPE or APPE as well as service learning or simulation (if separate from laboratory courses) at US schools or colleges of pharmacy. The “Master Publication List” is available in AACP Connect to all EE section members. All resources that the workgroups found were consolidated into one list (Appendix 1).

Each workgroup drafted a list of essential elements for their assigned APPE. Task force members then served as peer reviewers for the results of all workgroups in an iterative process. They compared elements drafted for APPEs in similar practice settings: inpatient general medicine patient care versus hospital/health system pharmacy and ambulatory patient care versus community pharmacy care. At each stage, task force members were asked to

share drafts of the essential elements with their own school's EE team and members of their regional consortia for input. All recommendations and edits received were incorporated iteratively first by members of the workgroups and then edited by the task force chair. It became clear that multiple workgroups had independently created elements that were similar across experiences. When this happened, the chair edited the wording for consistency which the workgroups reviewed and approved.

In summer 2016, draft essential elements for all four required APPEs were shared with members of the EE section during a business meeting at the AACP Annual Meeting in Anaheim, CA. Task force members gathered input and edits from section membership in a series of round table discussions. The task force listened, took notes, and then met to consolidate the gathered input. After incorporating all this information, the task force reached agreement on three of the four APPEs: inpatient general medicine patient care, ambulatory patient care, and community pharmacy. Members achieved consensus for these elements through an iterative process of information gathering, discussion and agreement, writing and rewriting, peer review by EE consortium members, and the task force's assessment of the agreements made across section membership. After final editing by the chair, a near final version was distributed electronically to the EE section membership in spring 2017 for comment.

Agreement was not reached regarding essential elements for the hospital/health system APPE. Discrepancies identified were related to whether the experience should primarily be in direct patient care, distribution/operations, or management. Differences were found among practice models in which student placement was based on type of hospital (academic health center versus community hospital), geographic region and the state of practice, and size of hospital and its pharmacy staff. Taskforce members concluded that many hospitals would have difficulty achieving a significant amount of the essential elements as drafted. The task force chose not to release a set of essential elements for the hospital/health system APPE and to recommend that the EE section appoint a subsequent task force to investigate the requirements for this specific APPE.

In an attempt to gain further clarification and agreement, an electronic survey of the member schools was conducted to gather input on concerns regarding the essential elements for the health-system pharmacy APPE. Each school was asked for one response only. Results of this survey were discussed among the task force members at the AACP Annual Meeting in July 2017. While only 43 schools (31%) responded to the survey about the health system pharmacy APPE, responses were consistent with

prior published results, which demonstrated schools are divided among three general approaches to this APPE experience:¹² pharmacy workflow and distribution with some direct patient care (primarily an orientation to the medication-use system), clinical responsibilities blended with operations (primarily direct patient care), and administration and management (non-direct patient care only).

Consequently, the taskforce concluded that approaches to the health-system pharmacy APPE are too inconsistent across schools to produce a set of common elements that most schools would support. The task force discussed that schools without on-campus medical centers may find it difficult to offer what was perceived as an "appropriate" rotation for students. Also, embedded site needs to accomplish projects or prioritize dispensing activities over direct patient care duties complicated interpretations as to whether this experience could and should emphasize such activities at all hospitals.

Two specific activities of greatest concern, supervising technicians and sterile compounding, serve as examples of where members did not reach a general agreement. While supervising technicians is an important part of what hospital pharmacists do, the ability of students to practice supervising and checking technicians' work vary across hospital sites. Many respondents questioned whether students could accomplish this before graduation. Nearly half of respondents stated such a skill should not be included in the health-system pharmacy APPE. Many survey respondents also had concerns about requiring students to participate in sterile compounding. Most respondents highlighted that hospitals usually require rigorous training and certification before staff members are allowed to do this (eg, regulations related to implementation of USP 797 and 800 standards restrict access to trained personnel). As such, most sites do not allow students to participate in sterile compounding. While many felt familiarity with USP 797 and 800 was important for students, actual experience making sterile products was probably not a universally realistic expectation.

Therefore, the final version of the essential elements reflects only three of the four core required APPEs: inpatient general medicine patient care, ambulatory patient care, and community pharmacy (Tables 1-3). A second task force was formed and charged with analyzing health-system pharmacy practice and developing recommendations for essential elements for this APPE.

Implementation of Essential Elements

In 2017, the final version of the essential elements was shared electronically with staff at ACPE and published on AACP Connect for members of the EE Section.

Table 1. Essential Elements for Inpatient General Medicine Patient Care APPE

General Category	Element
Pharmacist Patient Care (PPC)	<p>PPC 1. Demonstrate appropriate depth and breadth of pharmacotherapeutics and disease-related knowledge for a variety of common conditions seen in adult acute care patients.</p> <p>PPC 2. Efficiently and appropriately optimize patient-specific outcomes for acute care patients using the Pharmacist Patient Care Process (PCPP), in collaboration with other health care providers.</p> <p>PPC 3. Accurately prioritize multiple patient care responsibilities/needs in times of high activity and workload.</p> <p>PPC 4. Apply pharmacokinetic dosing principles for a variety of commonly used drugs to determine the correct dose.</p>
Communication and Education (C&E)	<p>C&E 1. Document patient care activities clearly and concisely to reflect the PPCP in appropriate site-specific health record system(s).</p> <p>C&E 2. Educate health care team members on pharmacy topics relevant to their roles and practice.</p>
Interprofessional Collaboration (IPC)	<p>IPC 1. Actively contribute as a member of an interprofessional health care team.</p>
Evidence-Based Medicine (EBM)	<p>EBM 1. Apply evidence-based medicine practices to demonstrate knowledge of information applicable to acute care medicine.</p>
Practice-Specific Responsibilities (PSR)	<p>PSR 1. Perform institutional procedures and apply best practices to ensure continuity of care for patients transitioning across health care settings.</p>

These essential elements can be used by faculty and staff in EE to guide preceptors and sites to offer consistent, quality experiences for all students. The essential elements represent what schools across the country value as important minimum requirements for all students to experience in these required practice settings. Schools and practice sites could augment these elements with ad-

ditional skills and requirements as appropriate. In fact, they are encouraged to do so. Examples of learning objectives and activities for students as well as further details are outlined for each element in the version published for EE Section members on AACP Connect. As outlined, the list of elements does not indicate how often or in what quantity students should perform each element.

Table 2. Essential Elements for Ambulatory Patient Care APPE

General Category	Element
Pharmacist Patient Care (PPC)	<p>PPC 1. Demonstrate appropriate depth and breadth of pharmacotherapeutics and disease-related knowledge for a variety of common conditions seen in ambulatory care clinic populations.</p> <p>PPC 2. Efficiently and appropriately optimize patient-specific outcomes for ambulatory care patients using the Pharmacist Patient Care Process (PCPP), collaboration with other health care providers.</p>
Communication and Education (C&E)	<p>C&E 1. Document patient care activities clearly and concisely to reflect the PPCP in appropriate site-specific health record system(s).</p> <p>C&E 2. Advocate for patient access to medications to optimize patient outcomes.</p> <p>C&E 3. Perform patient-centered medication education.</p> <p>C&E 4. Adjust communication style, techniques, and language in response to patient-specific needs and individual social determinants of health.</p>
Interprofessional Collaboration (IPC)	<p>IPC 1. Actively contribute as a member of an interprofessional health care team.</p>
Evidence-Based Medicine (EBM)	<p>EBM 1. Apply evidence-based medicine practices to demonstrate knowledge of information applicable to ambulatory care practice.</p>
Practice-Specific Responsibilities (PSR)	<p>PSR 1. Use population-level data and quality metrics to identify and develop practices or strategies for improving outcomes and/or addressing health promotion and disease prevention for the population served by the clinic.</p>

Table 3. Essential Elements for Community Pharmacy APPE

General Category	Element
Pharmacist Patient Care (PPC)	<p>PPC 1. Efficiently and appropriately optimize patient-specific outcomes for ambulatory care patients using the Pharmacist Patient Care Process (PCPP), in the community pharmacy setting.</p> <p>PPC 2. Proactively identify and resolve drug-related problems including patient-specific barriers to medication adherence.</p> <p>PPC 3. Educate patients about self-care and medication self-administration including making recommendations regarding medications (prescription and over-the-counter) and non-drug therapy alternatives.</p> <p>PPC 4. Triage and refer patients to other members of the health care team to meet a specific patient's health needs.</p>
Communication and Education (C&E)	<p>C&E 1. Proactively perform patient-centered counseling and medication education using the most current and relevant information.</p> <p>C&E 2. Adjust communication style and techniques (eg, motivational interviewing, coaching, and counseling/education) in response to patient-specific needs and individual social determinants of health.</p>
Population Health (PH)	<p>PH 1. Provide patient with health and wellness strategies including provision of community screening and education services when indicated.</p>
Dispensing System and Safety Management (D&S)	<p>D&S 1. Accurately apply the prescription verification process (eg, legitimate prescription, appropriate dose, interactions, drug utilization review).</p> <p>D&S 2. Use a computerized pharmacy management system and best practices related to safe medication use in distribution of medications to patients.</p>
Practice Management (PM)	<p>PM 1. Demonstrate the role of a pharmacist in managing legal, human, financial, technological and/or physical resources for day-to-day operations in the pharmacy.</p> <p>PM 2. Participate in continuous quality improvement techniques to optimize the medication use process.</p>

Consequently, the essential elements are not intended to become an assessment tool for individual student performance. Schools are encouraged to work with their preceptors to determine specific responsibilities they will assign to APPE students that fulfill the elements as well as achieve their school's curricular outcomes. As an example, the University of Washington held a preceptor retreat where faculty and preceptors worked together to list all potential activities a student could do to participate in and/or demonstrate each element. After creating the list, preceptors then identified which activities they could confidently have every student do in their practice site. Members of the EE team consolidated the lists to create a required curriculum for the three APPEs in question and are using it to work with sites to standardize experiences across sites.

The taskforce identified many professional competencies such as problem solving/critical thinking, professionalism, communication, leadership, cultural awareness, and evidenced-based medicine practices that should be required during these and all APPEs. These competencies are outlined in the Center for Advancement of Pharmacy Education (CAPE) Outcomes (Appendix 1), and,

as such, schools are already assessing student performance of them.¹⁶ In fact, many pharmacy schools and EE consortia are using rigorous scholarly methods to validate their assessment tools to reliably measure student competency.¹⁷⁻¹⁹ Instead, the task force focused on developing a set of practice activities/skills specific to the required experiences that could guide program evaluation and quality improvement rather than student assessment.

While consensus could not be reached for the hospital/health system APPE, it was reached easily with the elements for the other APPEs. We suspect this was due to better definition and understanding of these practice settings and the typical activities performed there. Interestingly, evidenced-based medicine did not arise as an essential element for the community pharmacy APPE as it did for the other two, even though it can and does happen in that setting. This element could be required for that experience, if a school chose to include it. The only element the task force debated was interprofessional collaboration. This element was included in the acute care general medicine and ambulatory care APPEs but not in the community pharmacy APPE. All task force members

agreed that interprofessional collaboration can be achieved in all settings, including community pharmacy. However, how it would be achieved in community practice and how much time it would take to require it of all practice sites remained unclear. Therefore, the task force did not include it as a requirement at this time but would support schools including it in their requirements as an additional element.

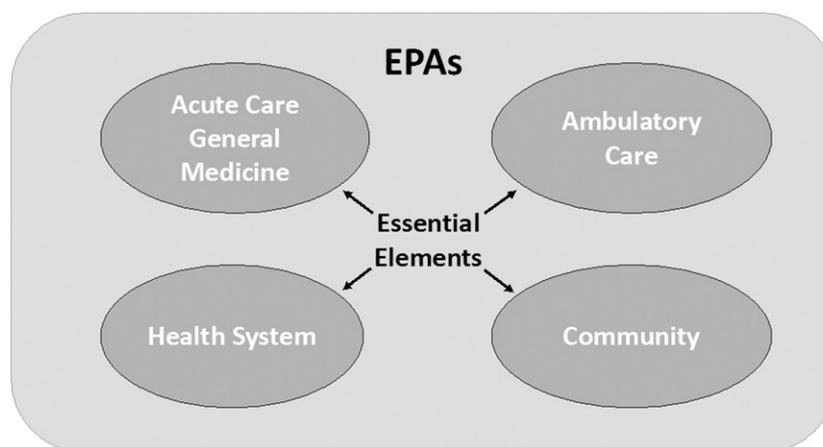
During development of the essential elements, creation of the Core Entrustable Professional Activities for New Pharmacy Graduates (EPAs) was ongoing.²⁰ The taskforce was aware and informed of this concurrent process, and task force members saw their work as separate yet complementary. The essential elements focus on the practice-setting specific skills and activities that should be consistent across all sites that offer a particular type of APPE (Figure 1). In effect, they define the minimum experience that a student should have across all sites offering the same APPE. The EPAs are units of practice (skillsets) that new graduates must be able to perform independently upon entry to the workforce. The EPAs can and will be performed across multiple practice settings and represent what all new graduates can be expected to perform day one on the job. As such, EPAs are not practice setting specific like the essential elements are. Still, the task force recognizes that the essential elements can be easily confused with the EPAs as well as the CAPE Outcomes (Appendix 1). The authors do not offer these elements as another checklist to complete about students. The authors offer this document in the spirit of helping schools to standardize experiences and to provide context for quality assurance, so that all students get a minimum, similar set of experiences with common expectations across practice sites. Faculty and staff in EE programs should use this construct to develop

assessments for practice site performance or to define which course an experience is providing, not for individual student performance. How schools go about assessing student performance will depend on their stated program outcomes, chosen assessment plan, corresponding strategies, and scholarly efforts to validate their chosen assessment tools.

To remain consistent with local and regional practice standards, individual schools may choose to include additional activities as they implement the elements. Achievement of the essential elements across practice sites of the same APPE may vary slightly based on their practice model, staffing and organization, and standards of practice. The essential elements listed in Tables 1-3 include only those for which agreement was reached. The task force recognizes that individual schools may expand the list as they address practice standards and legal/regulatory boundaries for scope of practice in their respective states. Faculty and staff in EE at each school will have to work with practice sites to individually apply and adapt the essential elements as part of their ongoing quality assurance processes.

Future Implications

The essential elements, in effect, represent a subset of the EPAs and thus can support student development of them. Subsequent work of another committee has now mapped the essential elements to the EPAs, further demonstrating that the essential elements do not supplant use of EPAs in assessing student performance.²¹ While schools will use EPAs to measure and design assessments for individual student performance, the essential elements will be used to guide practice sites to offer consistent student experiences representative of specific practice settings. In effect, the EPAs serve as a guide for student



EPAs: Entrustable Practice Activities
APPEs: Advanced Pharmacy Practice Experiences

Figure 1. Relationship Between EPAs and Essential Elements for APPEs

performance assessment, and the essential elements serve as a guide for site and preceptor quality assurance.

In addition to the essential elements, pharmacy schools should use the “Standards 2016” and the ACPE “Guidance for Standards 2016” to develop their quality assurance process in EE.^{13,22} The elements are intended to be used in conjunction with this guidance to hold practice sites accountable for offering consistent, quality learning experiences for students. The guidance lists activities for APPEs in section 13f and outlines criteria for practice sites in section 22a. In fact, many of the activities in 13f overlap with the elements. Each school must determine how they will conduct quality assurance processes using these tools with their affiliated practice sites.

Since many schools belong to regional EE consortia, we encourage schools to measure student performance for professional competency during APPEs using assessment tools developed regionally whenever applicable. We encourage continued collaborative scholarship among schools to analyze the performance of their assessment tools and validate them. Such efforts represent important scholarship opportunities for EE faculty, which elevates evidence as opposed to constricting scientific opportunity by dictating a “one size fits all” evaluation form developed by a select few. Allowing EE consortia to develop and validate assessment tools helps to foster scholarly inquiry and accommodates regional differences in practice and unique characteristics of individual school curricula. As results of validation processes are published, the state of the science and evidence in the literature should grow.

Because the essential elements focus on qualitative description of activities, we suggest further discussion at the school or regional level should take place to determine quantitative and frequency measures of the elements. Additionally, we recommend a follow-up analysis to determine both how these essential elements are implemented as well as their value in contributing to quality assurance of practice sites. It is also important to recognize that how each site is organized was likely to be unique depending on the practice model, nature of the patients, and culture within practitioners associated with said site. We believe that in addition to the EPAs, these essential elements can serve as a foundation for constructing rotations that successfully prepare practice ready professionals.

Essential elements outline activities for three of the four required APPEs only. Another taskforce has been convened to further define essential elements for the health system APPE. Questions about appropriate levels of participation (ie, observing verses performing) in various practice activities were revealed as we came to agreement on what was appropriate for APPEs. While some guidance for IPPE expectations and length is provided in

“Standard 12: Pre-Advanced Pharmacy Practice Experience (Pre-APPE) Curriculum” within “Standards 2016,” further analysis would be needed to identify essential elements specific to IPPEs. If greater standardization of IPPEs is desired, a subsequent taskforce would be needed.

CONCLUSION

An AACP EE Section Task Force developed essential elements for the core required APPEs over two years through a peer-reviewed and consensus-driven process. This process revealed inconsistencies in health system pharmacy APPEs; yet, it produced common elements that should be required for the inpatient general medicine patient care, ambulatory patient care, and community pharmacy required APPEs. Pharmacy schools can use these essential elements as a guide for quality assurance and site development to improve consistency across student experiences. We recommend continued discussion among experiential programs, the AACP EE section, and staff/board members at ACPE to define common expectations specific to health system pharmacy APPE activities. Furthermore, ACPE can use these elements to guide site visit teams as they assess schools for quality improvement and consistent student experiences across sites. We recommend that these elements be revisited again after sufficient time has passed to allow their adoption to determine further best practices on how schools are using them as a quality assurance tool.

ACKNOWLEDGMENTS

The authors would like to recognize additional members of their task force who assisted in the development of these essential elements: Lea Bonner, PharmD (Mercer University College of Pharmacy); Andrea Cameron, BS Pharm, MBA (University of Toronto); Cambria DeHoag, PharmD (Ferris State University College of Pharmacy); Vincent C. Dennis, PharmD, (University of Oklahoma College of Pharmacy); Michael Doherty, PharmD, BS (James L. Winkle College of Pharmacy University of Cincinnati); Shelli Holt-Macey, RPh (Wilkes University Nesbitt School of Pharmacy); Michael MacEvoy, PharmD, (D’Youville College School of Pharmacy); Jean Rogers, PharmD (Palm Beach Atlantic University College of Pharmacy).

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Appendix 1. Resource List

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