AACP Report

The AACP Academic Affairs Committee’s Final 2022 Curricular Outcomes and Entrustable Professional Activities (COEPA) for Pharmacy Graduates to Replace 2013 CAPE and 2016 EPAs

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ABSTRACT

The American Association of Colleges of Pharmacy (AACP) Academic Affairs Committee was charged with revising both the 2013 Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes (EOs) and the 2016 Entrustable Professional Activities (EPAs). The Committee changed the document name from the CAPE outcomes to COEPA, (Curricular Outcomes and Entrustable Professional Activities) since the EOs and EPAs were in 2 separate documents previously, and the 2016 Entrustable Professional Activities (EPAs). The Committee changed the document name from the CAPE outcomes to COEPA, (Curricular Outcomes and Entrustable Professional Activities) since the EOs and EPAs were in 2 separate documents previously, and the 2016 Entrustable Professional Activities (EPAs) were in 2 separate documents previously, the process of revising both at the same time and streamlining them into 1 document led the Committee to rename them COEPA. The singular COEPA document was created to help to reduce confusion and emphasize the relationship between EOs and EPAs. The AACP Board selected Scott K. Stolte, PharmD to chair the panel, Melissa S. Medina EdD to serve as vice-chair, and Kelly Ragucci, PharmD, to serve as the AACP staff liaison. The AACP BOD also invited 10 pharmacy faculty to serve on the Committee who represented diversity through their institution type and year established, geographic location, discipline, practice type, appointment, role at their institution, opinions, and perspectives. The Committee’s primary charge was to review and revise the CAPE EOs and the EPAs for new pharmacy graduates.

The 2021–2023 AACP Academic Affairs Committees were charged by the AACP Board of Directors (BOD) to review and revise the CAPE EOs and EPAs to ensure that they are relevant and consistent with emerging scientific and clinical developments and practitioner roles. Since CAPE and EPAs were in 2 separate documents previously, it is important to note that revisions of both at the same time and streamlining them into 1 document led the Committee to rename them COEPA. The singular COEPA document was created to help to reduce confusion and emphasize the relationship between EOs and EPAs. The AACP BOD selected Scott K. Stolte, Doctor of Pharmacy (PharmD) to chair the panel, Melissa S. Medina EdD to serve as vice-chair (and later appointed as chair), Michelle Farland, PharmD to serve as vice-chair, and Kelly Ragucci, PharmD, to serve as the AACP staff liaison. The AACP BOD also invited 10 pharmacy faculty to serve on the Committee who represented diversity through their institution type and year established, geographic location, discipline, practice type, appointment, role at their institution, opinions, and perspectives. The Committee’s primary charge was to review and revise the CAPE EOs and the EPAs for new pharmacy graduates.

Introduction

The American Association of Colleges of Pharmacy (AACP) Curricular Outcomes and Entrustable Professional Activities (COEPA, pronounced COPA) 2022 document represents the fifth version (preceded by AACP Academic Affairs panels in 1994, 1998, 2004, and 2013) of the Center for the Advancement of Pharmacy Education (CAPE) educational outcomes (EO).1 Educational outcomes are statements that describe what a learner should be able to do at the end of a program. The EOs represent the knowledge, skills, and attitudes (KSAs) of pharmacists that all students should demonstrate upon graduation.2 The EOs were created to facilitate curricular discussions with faculty and preceptors within the Academy and to guide curriculum planning, delivery, and assessment within pharmacy programs.

The COEPA 2022 document also incorporates an update to the Entrustable Professional Activities (EPAs), thereby representing the second version of EPAs. The EPAs for new pharmacy graduates were originally established in 2016 by the AACP Academic Affairs Committee to translate the CAPE EOs into practice activities.3,4 The EPAs describe the work of pharmacists as workplace tasks and responsibilities that all students are entrusted to do in the experiential setting with direct or distant supervision.3–5 It is important to note that EPAs are activities and are broad tasks or groups of tasks. These activities become the focus of an assessment when an individual is observed performing the activity. As such, preceptors assess the level of supervision a student needs to perform or execute the clinical activity/task using an entrustment decision scale.3,5

The American Association of Colleges of Pharmacy (AACP) Academic Affairs Committee was charged with revising both the 2013 Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes (EOs) and the 2016 Entrustable Professional Activities (EPAs). The Committee changed the document name from the CAPE outcomes to COEPA, (Curricular Outcomes and Entrustable Professional Activities) since the EOs and EPAs would now be housed together. A draft of the COEPA EOs and EPAs was released at the AACP July 2022 Annual meeting. After receiving additional stakeholder feedback during and after the meeting, the Committee made additional revisions. The final COEPA document was submitted to and approved by the AACP Board of Directors in November 2022. This COEPA document contains the final version of the 2022 EOs and EPAs. The revised EOs have been reduced to 3 domains and 12 subdomains (from 4 domains and 15 subdomains previously in CAPE 2013) and the revised EPAs have been reduced from 15 to 13 activities.
Pharmacist Licensure Examination (NAPLEX) blueprint revision; and adjustments to the Interprofessional Education Collaborative Core Competencies for Interprofessional Collaborative Practice, to name a few. These influences are addressed throughout the revised document.

To initiate and guide their work, the Committee sought frequent input from the Academy about the existing 2013 EOs and 2016 EPAs as draft versions the current committee proposed. The Committee solicited feedback from July 2021 through October 2022 from all AACP members through surveys, virtual town hall meetings, targeted interviews, individual queries, AACP task force consultations, focus groups, open comment periods, and structured feedback sessions at the AACP 2022 Interim and Annual meetings. The Committee also sought input regarding the revision from the members of other national pharmacy organizations via multiple invitations distributed through the Joint Commission of Pharmacy Practitioners. Through these feedback efforts, general themes, and suggestions emerged that helped shape the revisions. The Committee summarized, quantified, vetted, and addressed all stakeholder feedback and made modifications to the EOs and EPAs, as needed.

Specifically, the majority of feedback to the EOs called for (1) an expansion of Domain 1 (knowledge); (2) incorporation of topics related to digital health; (3) revision of language in Domain 2 (skills) to reinforce person-centered care and align terminology with the Pharmacists’ Patient Care Process; (4) expansion of the cultural sensitivity; (5) clarification of advocacy for patients and the profession; (6) expansion of the emphasis on teamwork skills; (7) incorporation of digital health; (8) revision of language in Domain 2 (skills) to re-inforce person-centered care and align terminology with the Pharmacists’ Patient Care Process; (9) expansion of Domain 1 (knowledge); (10) incorporation of topics related to digital health; (11) revision of language in Domain 2 (skills) to re-inforce person-centered care and align terminology with the Pharmacists’ Patient Care Process; (12) expansion of Domain 1 (knowledge); (13) incorporation of topics related to digital health; (14) revision of language in Domain 2 (skills) to re-inforce person-centered care and align terminology with the Pharmacists’ Patient Care Process; and (15) expansion of Domain 1 (knowledge). The Committee also received feedback that pharmacy programs’ curricula were already overloaded, so careful attention was given to simplifying where possible and avoiding significant content additions.

The feedback received regarding the EPAs related to (1) include a general scope of practice available across practice settings; (2) reflect common activities completed by pharmacists in practice at an entry-level in a variety of practice settings; (3) remove EPAs that are not workplace activities that cannot be directly observed; (4) avoid language that is specific to immunization administration; instead update to include testing, treating, and administering medications; (5) ensure EPA assessments measure trust of the pharmacist observer and that these levels of entrustment are not tied to grades.

Once initial feedback was collected, the Committee then outlined the overarching core values and guiding principles that serve as the foundation for pharmacists and underpin KSAs, and behaviors required across the entire profession. These core values include but are not limited to compassion, empathy, inclusiveness, integrity, justice, responsibility, and trustworthiness. Without these values, which are derived from and consistent with the recently updated Oath of a Pharmacist, the individual will not be able to meet the needs of the public to serve as an effective pharmacist. In addition, pharmacists are called to enter into a non-reciprocal covenantal relationship with patients which encompasses advocating for patients who cannot or may not be able to advocate for themselves and to also advocate for the profession to advance pharmacy practice. Through this relationship, it is expected that pharmacists be cognizant of ethical issues/concerns as well as diversity, equity, inclusion, and accessibility factors that may impact patient care. Another guiding principle is for pharmacy programs to foster students’ professional identity formation, which is defined as the transformative process of identifying and internalizing the ways of being and relating within a professional role. It is how students learn to think, act and feel like a member of the pharmacy community and it influences how a professional perceives, explains, presents, and conducts themselves. After the core values were established, the Committee started the revision process by acknowledging that EOs and EPAs are applicable across multiple practice settings that pharmacists commonly work in at entry into the profession and it is intended that graduates should continue developing these throughout their career.
The Committee then revised the EOs and reduced the previous 4 domains into 3 domains by merging the previous 2 skills domains (Domains 2 and 3) into 1 skill domain. The 3 new domains are KSA, which reflects a simplification and realignment with a recognized educational framework.3,4,5,6 The subdomains were also revised from 15 to 12 subdomains. Each subdomain includes a one-word descriptor, an outcome description, and references to the literature, as needed. The knowledge subdomain was aligned with the Accreditation Council for Pharmacy Education Standards 2016 Appendix 1 and informed by the NAPLEX blueprint.7,8,9,10 The skills domain (Domain 2) was then reordered to reflect the skills needed to fulfill a pharmacist’s role followed by skills needed to fulfill one’s role on a team. The EO domains, subdomains, one-word descriptors, and outcome descriptions are provided in Table 1.3,12–14,16–19

Next, the EPAs, which are designed as experiential/workplace activities (or tasks) were evaluated using the EQual rubric2,17 and subsequently revised and reduced from 15 to 13 activities.7 Each EPA requires a learner to acquire foundational KSA in the classroom setting before they can be entrusted with the task in the experiential setting.6,7 The revised EPAs are in Table 2.3,4,23–34,40,41 The revised EPAs 1–10 are aligned with the Pharmacists’ Patient Care Process and are mapped and designated accordingly.3 Bolded words in Tables 1 and 2 are listed in a glossary and terms and definitions along with references to the literature, in order to encourage a shared understanding of the keywords (Table 3).3,8,11,16–22,24,22–44,49–51

Following the EPA revisions, the Committee then reviewed the original EPA levels of entrustment scale (Table 4).3,5,2,53 The original pharmacy entrustment decision scale was based on medical education’s Ottawa scale,54 which used 5 levels of supervision for the activity, ranging from observation only, even with direct supervision; perform with direct supervision; perform with reactive supervision (help is on request and quickly available, the preceptor trusts that the learner will ask for help); intermittent supervision (supervise at a distance and/or

Table 2 Revised Entrustable Professional Activities (EPAs).a,b,c

<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>1. Collect information necessary to identify a patient’s medication-related problems and health-related needs.</td>
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<tr>
<td>2. Assess collected information to determine a patient’s medication-related problems and health-related needs.</td>
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<tr>
<td>3. Create a care plan in collaboration with the patient, others trusted by the patient, and other health professionals to optimize pharmacologic and nonpharmacologic treatment.</td>
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<td>4. Contribute patient-specific medication-related expertise as part of an interprofessional care team.</td>
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<tr>
<td>5. Answer medication-related questions using scientific literature.</td>
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<tr>
<td>6. Implement a care plan in collaboration with the patient, others trusted by the patient, and other health professionals.</td>
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<tr>
<td>7. Fulfill a medication order.</td>
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<tr>
<td>8. Educate the patient and others trusted by the patient regarding the appropriate use of a medication, device to administer a medication, or self-monitoring test.</td>
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<tr>
<td>10. Report adverse drug events and/or medication errors in accordance with site-specific procedures.</td>
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<tr>
<td>11. Deliver medication or health-related education to health professionals or the public.</td>
<td></td>
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<tr>
<td>12. Identify populations at risk for prevalent diseases and preventable adverse medication outcomes.</td>
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<tr>
<td>13. Perform the technical, administrative, and supporting operations of a pharmacy practice site.</td>
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Abbreviation: EPA, Entrustable Professional Activity.

a EPAs are activities not assessments; EPAs delineate essential tasks of a pharmacist that a doctor of pharmacy graduate can be entrusted with.

b EPAs 1–10 are aligned with the Pharmacist Patient Care Process.

c EPA 1 aligns with Collect, EPA 2 aligns with Assesses, EPAs 3–5 aligns with Plan, EPAs 6–8 align with Implement, and EPAs 9 and 10 align with Monitor.

d Bolded words are listed in Table 3 which includes a glossary of terms, definitions, and references.

Table 3 Glossary.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1. Scientific Thinking (Learner)</td>
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<tr>
<td>● Foundational knowledge - outlined in American Council for Pharmacy Education Appendix 1 and include the biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences as they pertain to the practice of pharmacy.14</td>
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<tr>
<td>● Biomedical sciences - the preprofessional sciences (eg, chemistry, physics, biology) and biomedical (eg, anatomy, physiology, biochemistry, immunology, biostatistics).15</td>
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<tr>
<td>● Pharmaceutical sciences - The pharmaceutical sciences build on principles introduced in the preprofessional biomedical sciences including pharmacoeconomics, pharmacokinetics, pharmacology, pharmacodynamics, medicinal chemistry, clinical pharmacy, pharmaceutical calculations, and pharmaceutical compounding, which are taught in the professional pharmacy curriculum and collectively explain drug and/or drug product formulation, delivery, stability and action.</td>
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<tr>
<td>● Social, behavioral, administrative sciences - the disciplines and concepts of public health, epidemiology, economics, fiscal management, health behavior, outcomes, research methods, law and ethics, healthcare administration, management, and operations, marketing, communications, medication distribution systems taught within the professional pharmacy curriculum.16</td>
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<tr>
<td>● Clinical sciences - the areas of the professional pharmacy curriculum focused on the integration and application of the biomedical, pharmaceutical, and social/behavioral/administrative sciences to improve the human condition through the safe and efficacious use of medications.17</td>
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<tr>
<td>● Digital health - digital technologies that improve health and include categories such as mobile health, health information technology, wearable devices, telehealth and telemedicine, personalized medicine, and tools such as mobile health apps and software.</td>
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2.1 Problem-Solving Process (Problem Solver)

a Problem-solving skills: Identify define problems that have multiple considerations (and possibly more than 1 viable solution); explore and prioritize potential strategies; compare and contrast potential solutions; design and evaluate implemented solutions using evidence and/or rationale and anticipate and reflect on outcomes.18,19

b Critical thinking - evaluating conclusions by systematically examining the problem, evidence, & solution. It includes 6 core skills including interpretation, analysis, evaluation, inference, explanation, and self-regulation.19,20

c Innovative mindset - a set of beliefs that includes being forward-thinking, creative, open to testing, comfortable making mistakes and trying again; collaborative and focused on progress that allows a person to generate creative or novel solutions to problems that result in improved performance.21

2.2 Communication (Communicator) AND EPAs 8 and 11

a Communication: Communication is the exchange of information between patients, health care providers, and others that involves skills such listening, speaking, writing, observing nonverbal communication, decoding messages, giving and receiving feedback, and empathizing.22

b Educating: Educating focuses how to package, deliver, coach, and assess individuals to increase their ability to learn, retain, access, and use knowledge. Educating involves teaching methods, instructional strategies, individual differences, and assessment techniques.24

2.3 Cultural and Structural Humility (Ally)

a Cultural humility - Ability to recognize one’s own limitation in order to avoid making assumptions about other cultures, admitting that one does not know and is willing to learn from patients/person/client/consumer/community about their experiences while being aware of one’s own embeddedness in culture(s).23

b Structural humility - The capacity of health care professionals to appreciate that their role is not to surmount oppressive structures but rather to understand knowledge and practice gaps via -vis structures, partner with other stakeholders to fill these gaps, and engage in self-reflection throughout these processes.24

c Health disparities - preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.25

1. Collect information necessary to identify a patient’s medication-related problems and health-related needs. |
2. Assess collected information to determine a patient’s medication-related problems and health-related needs. |
3. Create a care plan in collaboration with the patient, others trusted by the patient, and other health professionals to optimize pharmacologic and nonpharmacologic treatment. |
4. Contribute patient-specific medication-related expertise as part of an interprofessional care team. |
5. Answer medication-related questions using scientific literature. |
6. Implement a care plan in collaboration with the patient, others trusted by the patient, and other health professionals. |
7. Fulfill a medication order. |
8. Educate the patient and others trusted by the patient regarding the appropriate use of a medication, device to administer a medication, or self-monitoring test. |
10. Report adverse drug events and/or medication errors in accordance with site-specific procedures. |
11. Deliver medication or health-related education to health professionals or the public. |
12. Identify populations at risk for prevalent diseases and preventable adverse medication outcomes. |
13. Perform the technical, administrative, and supporting operations of a pharmacy practice site. |

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a EPAs are activities not assessments; EPAs delineate essential tasks of a pharmacist that a doctor of pharmacy graduate can be entrusted with. |
b EPAs 1–10 are aligned with the Pharmacist Patient Care Process. |
Table 3 (continued)

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<tr>
<th>Item</th>
<th>Description</th>
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<td><strong>functioning, and quality of life outcomes and risks. There are 5 key domains:</strong> social and community context, education, neighborhood and built environment, health and health care, and economic stability.29</td>
<td><strong>2.4 Person-Centered Care (Provider)</strong></td>
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<td>• <strong>Person-centered care</strong> - A holistic approach to use with patients to be more inclusive. A broad definition of patient-centered care that extends the concept beyond clinical care where health care providers are encouraged to partner with patients, families, and caregivers, to co-design and deliver personalized care, including prevention and promotion activities, which provides people with the high-quality care they need and improves health-care system efficiency and effectiveness.9,10,11</td>
<td>• <strong>Professional Identity Formation</strong> - Involves internalizing and demonstrating the behavioral norms, standards, and values of a professional community, such that one comes to &quot;think, act and feel&quot; like a member of that community. Professional identity influences how a professional perceives, explains, presents, and conducts themselves.54</td>
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<tr>
<td>• <strong>Whole person care</strong> - Whole person health involves looking at the whole person—not just separate organs or body systems—and considering multiple factors that promote either health or disease. It means helping and empowering individuals, families, communities, and populations to improve their health in multiple interconnected biological, behavioral, social, and environmental areas.30-32</td>
<td>• <strong>Oath of a Pharmacist</strong> was revised in 2021.54</td>
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<td>• <strong>Patient</strong> - An individual who interacts with a clinician either because of real or perceived illness, for health promotion and disease prevention, and/or to meet social needs.33</td>
<td><strong>Abbreviation:</strong> EPA, Entrustable Professional Activity; IPEC, Interprofessional Education Collaborative.</td>
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<td>• <strong>Medication Specialist</strong> - During the doctor of pharmacy program students develop specialized knowledge in the safe and effective use of medications. However, a doctor of pharmacy curriculum does not provide sufficient deliberate practice with focused feedback to achieve expert-level performance. We expect they will continue to develop expertise after graduation.33</td>
<td><strong>post hoc, learner can independently perform the task); to level 5, supervise more junior colleagues.4-5</strong> The Ottawa scale was designed for medical residents and was later extrapolated for use within undergraduate medical education.44 This continuum of entrustment, starting with observation of activities through supervising colleagues, is directly applicable to medicine’s spectrum of education and training. However, in pharmacy education, post-graduate training is not mandatory, therefore consistent achievement in an educational environment can be challenging to assess.</td>
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<tr>
<td>• <strong>Leadership</strong> (Leader)</td>
<td>In the original Core EPAs for PharmD Graduates, 5 levels of entrustment were reported, though students were only expected to reach the third level (reactive supervision) by PharmD graduation.3,4 The 5-level scale, including aspects of independent practice, would apply across a pharmacist’s education and career, including post-graduate training and/or practice. The purpose of this Academic Affairs Committee report is to establish the expected entrustment level at graduation from a PharmD program, which aligns with the original Academic Affairs Committee 2015–2016 EPA report as “reactive supervision.”63 It is recognized that logistical limitations, such as pharmacy practice laws, restrict the activities that student pharmacists are allowed to perform independently, which was a major focus of the 2015–2016 scales’ fourth and fifth levels of entrustment supervision.3 In operationalizing the EPAs in PharmD programs, the current Academic Affairs Committee removed the numeric levels of the entrustment framework to allow people to focus instead on the description of the levels (Table 4). Regardless of the specific assessment tool schools and colleges of pharmacy may choose to use, reactive supervision remains the goal for PharmD graduates.</td>
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<tr>
<td>• <strong>Population Health and Wellness (Promoter) AND EPA 12</strong></td>
<td>The Committee recommends that the entrustment level assessment focuses on the description of supervision versus the numeric level as previously described.4-5 The assessment of entrustment level for students should be conducted prospectively.46 The performance expectation within pharmacy programs should range from observation only (referred to as preceptor modeling), to direct supervision (proactive supervision, doing EPAs with the preceptor), to indirect supervision (reactive supervision) during the scope of the PharmD program. Early learners may benefit from more detailed feedback. If programs find detailed feedback is needed, other entrustability scales that include additional sub-level descriptors have also been published.52,53</td>
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<tr>
<td>• <strong>Optimize medications</strong> - Occurs when there is a blend between (1) an optimal medication regimen, that is appropriate for the patient, effective for the medical condition, evidence-based, cost-effective, and safe for the patient to use; and (2) using shared decision making: a person-centered approach that incorporates the patient’s needs, abilities, values, and beliefs, and taking steps to ensure the medication can be properly used in the setting it will be administered.34</td>
<td><strong>Once the Committee finished all the core EO and EPA-related revisions as the result of several rounds of feedback from the Academy, they presented the final draft of the COEPA document to the AACP BOD in October 2022. The BOD, on behalf of the AACP members, unanimously voted to accept and adopt the document as submitted in November 2022. The final document will be circulated to the Academy in the Journal and on the AACP website.</strong></td>
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<tr>
<td>• <strong>Pharmacist’s Patient Care Process</strong> - a consistent process for the delivery of patient care across the profession that is applicable to any setting where pharmacists provide care and for any patient care service provided by pharmacists. The process includes collect, assess, plan, implement, and follow-up.6</td>
<td>The Committee will also create and publish an implementation toolkit that includes resources to operationalize the COEPA document for the Academy, including EO example learning objectives and EPA example tasks. This work will be offered to guide the delivery and assessment of the didactic and experiential curriculum and will be</td>
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Table 4

<table>
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<tr>
<th>Level</th>
<th>Description</th>
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<tr>
<td>Observe only</td>
<td>Learner is permitted to observe only. Even with direct supervision, learner is not entrusted to perform the activity or task.</td>
</tr>
<tr>
<td>Direct Supervision</td>
<td>Learner is entrusted to perform the activity or task with direct and proactive supervision. Learner must be observed performing task in order to provide immediate feedback.</td>
</tr>
<tr>
<td>Reactive Supervision</td>
<td>Learner is entrusted to perform the activity or task with indirect and reactive supervision. Learner can perform task without direct supervision but may request assistance. Supervising pharmacist is quickly available on site. Feedback is provided immediately after completion of activity or task.</td>
</tr>
<tr>
<td>Intermittent Supervision</td>
<td>Learner is entrusted to perform the activity or task with supervision at a distance. Learner can independently perform task. Learner meets with supervising pharmacist at periodic intervals. Feedback is provided regarding overall performance based on sample of work.</td>
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<tr>
<td>General Direction</td>
<td>Learner is entrusted to independently decide what activities and tasks need to be performed. Learner entrusted to direct and supervise activities of others. Learner meets with supervising pharmacist at periodic intervals. Feedback is provided regarding overall performance based on broad professional expectations and organizational goals.</td>
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Note: Table adapted from Ref.7 The expected performance level upon graduation from a doctor of pharmacy program should be reactive supervision. Example entrustment scales with sub-levels that can be used to provide early learners additional feedback can be found in Refs.3,5,2,53

documented in a separate publication in the Journal. Once published, each pharmacy program can utilize the example objectives and tasks as written, modify them, or create their own to fit the goals or strengths of their institution, as these are not designed to be prescriptive.

To provide additional guidance to the Academy, a third report will outline the relationship between EOs and EPAs across all learning settings, with anticipated publication in the Journal. The Committee will map the 13 EPAs to the EO skills domain. The EPAs will not be mapped to the knowledge and attitudes domains since these domains are inherently required for all 13 EPAs.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Melissa Medina and Daniel Malcom are Associate Editors for AJPE.

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References


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