



AACP Report

The AACP Academic Affairs Committee's Guidance for Use of the Curricular Outcomes and Entrustable Professional Activities (COEPA) for Pharmacy Graduates

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ABSTRACT

The 2021–2023 American Association of Colleges of Pharmacy Academic Affairs Committee (AAC) was charged with and completed the revision of the 2013 Center for the Advancement of Pharmacy Education Outcomes and the 2016 Entrustable Professional Activity (EPA) statements for new pharmacy graduates. This work resulted in a new combined document, the Curricular Outcomes and Entrustable Professional Activities (COEPA) that was unanimously approved by the American Association of Colleges of Pharmacy Board of Directors and was published in the Journal. The AAC was also charged with providing stakeholders with guidance about how to use the new COEPA document. To achieve this charge, the AAC created example objectives for all 12 Educational Outcomes (EOs) and example tasks for all 13 EPAs. Although programs are asked to retain the EO domains, subdomains, one-word descriptors, and descriptions, unless they are adding more EOs or increasing the taxonomy level of a description, colleges and schools of pharmacy can expand or edit the example objectives and example tasks to meet local needs, as these are not designed to be prescriptive. This guidance document is published separately from the COEPA EOs and EPAs to reinforce the message that the example objectives and tasks are modifiable.

1. Introduction

From July 2021 to July 2023, the American Association of Colleges of Pharmacy (AACP) Academic Affairs Committee (AAC) was charged with revising the 2013 Center for the Advancement of Pharmacy Education (CAPE) educational outcomes (EO)¹ (resulting in the fifth iteration of the document) and the 2016 Entrustable Professional Activities (EPAs) (resulting in the second version of the EPA document).^{2,3} Because the EOs and EPAs were simultaneously revised and merged into 1 singular document, the new document was named Curricular Outcomes and Entrustable Professional Activities (COEPA) to help emphasize the relationship between EOs and EPAs.⁴ The EOs were created to describe the knowledge, skills, and attitudes that all student pharmacists should demonstrate upon graduation.¹ EOs can also be referred to as Curricular Outcomes, as the terms are interchangeable. EPAs were designed to translate the EOs into practice activities.^{2,3} The EPAs describe pharmacy workplace activities that all students are entrusted to do in the experiential setting with direct or distant supervision that preceptors assess using an entrustment decision scale.^{2,3,5–7} In November 2022, the AACP Board of Directors, on behalf of the AACP members, unanimously voted to accept and adopt the document as submitted. The final version of COEPA was published in the Journal and on the AACP website.^{4,8} The Journal publication is the citable reference for the new COEPA 2022 EOs and EPAs.⁴ Two AAC reports that detailed this process were also published in the Journal.^{9,10} Therefore, 3 of the

AAC COEPA articles were published in the Journal (this current COEPA guidance article is the fourth of the AAC COEPA articles that will be available in the Journal).^{4,9,10}

The COEPA 2022 article⁴ offers the Academy one consolidated reference that integrates the COEPA preamble,⁴ pharmacy core values,⁴ EOs,⁴ EPAs,⁴ Pharmacists' Patient Care Process,¹¹ Interprofessional Education,¹² Professional Identity Formation,¹³ the Oath of the Pharmacist,¹⁴ the American Council for Pharmacy Education (ACPE) Standards 2016 Appendix 1,¹⁵ and the North American Pharmacist Licensure Examination Blueprint from the National Association of Boards of Pharmacy.¹⁶ Tables 1, 2 and 3 highlight the relationships among these areas, as well as a diagram that the AAC created to show the connections (Figure).

During the EO and EPA revision process, the AAC also revised and created example objectives for all 12 EOs and example tasks for all 13 EPAs and presented drafts to various AACP stakeholders to gather feedback and once obtained, the AAC finalized the example objectives and tasks (Tables 1 and 2 lists the example objectives and the example tasks).¹⁰ Each EO requires supporting learning objectives, and each EPA requires supporting tasks to demonstrate students' achievement of the EO or EPA. Because the objectives and tasks were categorized as examples, they were not sent to the AACP Board of Directors for review and approval because they were created as guidance to operationalize the COEPA document for the Academy. These examples were not designed to be program or accreditation requirements and were published

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Table 1
Curricular Outcomes and Entrustable Professional Activity Educational Outcomes and Example Objectives.^{a,b,c,d}

Domain	Subdomain #	Subdomain	One word descriptor	Outcome description
1 Knowledge	1.1	Scientific thinking	Learner	Seek, analyze, integrate, and apply foundational knowledge of medications and pharmacy practice (biomedical; pharmaceutical; social, behavioral, administrative; clinical sciences; drug classes; and digital health). Example objectives ^b
				<ul style="list-style-type: none"> Develop and demonstrate depth and breadth of knowledge in biomedical, pharmaceutical, social/behavioral/administrative, clinical sciences, and healthcare technology (eg, informatics, digital health). Articulate how knowledge in foundational sciences is integral to clinical reasoning; evaluation of future advances in medicine; supporting health and wellness initiatives; and delivery of contemporary pharmacy services. Integrate knowledge from multiple foundational sciences to explain how specific drugs or drug classes work, compare differences among therapeutic regimens, and evaluate their potential value in individuals and populations. Apply knowledge in foundational sciences to solve therapeutic problems, to advance patient-centered care and population-based care. Apply critical thinking skills to evaluate information (eg, scientific literature, emerging theories, technologies) and determine if factual, reliable, accurate, fair, objective, and/or appropriate by systematically examining the problem, evidence, and solution. Critically analyze scientific literature related to drugs and diseases to enhance clinical decision making.
2 Skills	2.1	Problem-solving process	Problem solver	Use problem solving and critical thinking skills, along with an innovative mindset, to address challenges and to promote positive change. Example objectives ^b
				<ul style="list-style-type: none"> Identify and define the primary problem. Define and prioritize goals along with contextual constraints. Use an innovative mindset to consider and develop alternative ideas and approaches to address challenges and/or advance the profession. Explore multiple solutions by organizing, prioritizing, and defending each possible solution with evidence and/or rationale. Assess the anticipated and actualized resource implications of decisions (eg, human, financial, physical resources). Anticipate positive and negative outcomes by considering assumptions, biases, barriers, inconsistencies, and unintended consequences. Develop a strategy to implement the most viable solution, including outcome measures. Reflect on the solution implemented and its effects to improve future outcomes.
	2.2	Communication	Communicator	Actively engage, listen, and communicate verbally, nonverbally, and in writing when interacting with or educating an individual, group, or organization. Example objectives ^b
				<ul style="list-style-type: none"> Assess baseline knowledge or skills of individuals or groups to identify needs. Identify and address barriers, including beliefs and biases that could impact communication and outcomes (eg, stereotypes, assumptions, time constraints, privacy considerations, space availability, internet disruptions, etc.). Ensure information is current, relevant, and tailored for the individual or group with whom you are communicating. Use an organized structure when educating an individual or group. Use specific communication strategies (eg, motivational interviewing, conflict resolution, writing progress notes, assessing understanding) to achieve goals. Actively listen and ask appropriate open and closed-ended questions to gather information. Evaluate verbal feedback and nonverbal cues to assess how well communication was received and verify if it was interpreted the way intended. Communicate assertively, confidently, clearly and with empathy to establish rapport, build trusting relationships, and navigate difficult conversations. Employ clear, concise, and accurate written communication strategies to achieve intended outcomes. Provide goal-directed feedback to others (eg, direct reports, trainees, colleagues). Use technology (eg, telehealth, digital health applications), media, and other resources (eg, interpreter services) to facilitate and support communication as appropriate.
	2.3	Cultural and structural humility	Ally	Mitigate health disparities by considering, recognizing, and navigating cultural and structural factors (eg, social determinants of health, diversity, equity, inclusion, and accessibility) to improve access and health outcomes. Example objectives ^b
				<ul style="list-style-type: none"> Engage in self-reflection with the intention to understand how one's personal identities, biases, and experiences may influence one's perspectives, interactions, and decision making. Demonstrate knowledge about assumptions such as explicit and implicit bias when interacting with others. Identify the practices and values of cultural humility that foster belongingness with a diverse group of individuals.

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Table 1 (continued)

Domain	Subdomain #	Subdomain	One word descriptor	Outcome description
	2.4	Person-centered care	Provider	<ul style="list-style-type: none"> Recognize ways to reduce biases and stereotyping. Discuss strategies for navigating situations where injustices related to diversity, equity, inclusion, and accessibility, stigma, bias, and racism are present. <p>Provide whole person care to individuals as the medication specialist using the Pharmacists' Patient Care Process</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Collect subjective and objective information related to the patient in order to identify a patient's medication-related problems. Assess, interpret, and prioritize information and patient data to determine the effects of therapy. Formulate evidence-based and cost-effective care goals, plans, assessments, and recommendations. Implement individualized, person-centered care plans. Follow-up and monitor the patient and adjust the care plan as needed. Document person-centered care related activities. <p>Promote the best interests of patients and/or the pharmacy profession within healthcare settings and at the community, state, or national level.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Assure that patients' best interests are represented. Empower patients to take responsibility for, and control of, their health. Review resources to assist patients in navigating the complex healthcare system. Ensure patients obtain the resources and care required in the most efficient and cost-effective manner possible. Discuss how to advocate in the workplace for yourself and other pharmacy colleagues around important issues (eg, working conditions, expected performance, patient safety, practice advancement, interprofessional equity). Demonstrate a commitment to the advancement of the pharmacy profession through advocacy at the local, state, or national level.
	2.5	Advocacy	Advocate	<p>Optimize patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of medication-use systems.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Outline the components of typical medication-use processes in different pharmacy practice settings. Describe the role of the pharmacist in impacting the safety and efficacy of each component of a typical medication-use process (ie, procurement, storage, prescribing, transcription, dispensing, administration, disposal, regulatory requirements, monitoring, documentation, and supervising others). Identify and utilize human, financial, and physical resources to optimize the medication-use process. Apply standards, guidelines, best practices, and established processes related to safe and effective medication use. Utilize continuous quality improvement techniques in the medication-use process. Develop professional documents pertinent to organizational needs (eg, monographs, policy documents). <p>Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Work with individuals of other professions to establish and maintain a climate of mutual respect and shared values. Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations. Communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease. Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient/population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable. <p>Assess factors that influence the health and wellness of a population and develop strategies to address those factors.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Identify personal, social, economic, and environmental factors that influence individual and population health and wellness. Describe advocacy approaches and efforts that impact individual and population health and wellness. Outline the steps for conducting a community health needs assessment. Collect and interpret population-based health and wellness qualitative and quantitative data to assess the needs of a patient population and satisfaction of care. Evaluate the existing approaches and suggest tailored interventions to maximize health and wellness. Participate in the development and/or implementation of preventive care strategies for a population (eg, risk/needs assessment, risk reduction, screening, and education).
	2.6	Medication-use process stewardship	Steward	<p>Optimize patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of medication-use systems.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Outline the components of typical medication-use processes in different pharmacy practice settings. Describe the role of the pharmacist in impacting the safety and efficacy of each component of a typical medication-use process (ie, procurement, storage, prescribing, transcription, dispensing, administration, disposal, regulatory requirements, monitoring, documentation, and supervising others). Identify and utilize human, financial, and physical resources to optimize the medication-use process. Apply standards, guidelines, best practices, and established processes related to safe and effective medication use. Utilize continuous quality improvement techniques in the medication-use process. Develop professional documents pertinent to organizational needs (eg, monographs, policy documents). <p>Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Work with individuals of other professions to establish and maintain a climate of mutual respect and shared values. Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations. Communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease. Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient/population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable. <p>Assess factors that influence the health and wellness of a population and develop strategies to address those factors.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Identify personal, social, economic, and environmental factors that influence individual and population health and wellness. Describe advocacy approaches and efforts that impact individual and population health and wellness. Outline the steps for conducting a community health needs assessment. Collect and interpret population-based health and wellness qualitative and quantitative data to assess the needs of a patient population and satisfaction of care. Evaluate the existing approaches and suggest tailored interventions to maximize health and wellness. Participate in the development and/or implementation of preventive care strategies for a population (eg, risk/needs assessment, risk reduction, screening, and education).
	2.7	Interprofessional collaboration	Collaborator	<p>Optimize patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of medication-use systems.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Outline the components of typical medication-use processes in different pharmacy practice settings. Describe the role of the pharmacist in impacting the safety and efficacy of each component of a typical medication-use process (ie, procurement, storage, prescribing, transcription, dispensing, administration, disposal, regulatory requirements, monitoring, documentation, and supervising others). Identify and utilize human, financial, and physical resources to optimize the medication-use process. Apply standards, guidelines, best practices, and established processes related to safe and effective medication use. Utilize continuous quality improvement techniques in the medication-use process. Develop professional documents pertinent to organizational needs (eg, monographs, policy documents). <p>Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Work with individuals of other professions to establish and maintain a climate of mutual respect and shared values. Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations. Communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease. Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient/population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable. <p>Assess factors that influence the health and wellness of a population and develop strategies to address those factors.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Identify personal, social, economic, and environmental factors that influence individual and population health and wellness. Describe advocacy approaches and efforts that impact individual and population health and wellness. Outline the steps for conducting a community health needs assessment. Collect and interpret population-based health and wellness qualitative and quantitative data to assess the needs of a patient population and satisfaction of care. Evaluate the existing approaches and suggest tailored interventions to maximize health and wellness. Participate in the development and/or implementation of preventive care strategies for a population (eg, risk/needs assessment, risk reduction, screening, and education).
	2.8	Population Health and Wellness	Promoter	<p>Optimize patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of medication-use systems.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Outline the components of typical medication-use processes in different pharmacy practice settings. Describe the role of the pharmacist in impacting the safety and efficacy of each component of a typical medication-use process (ie, procurement, storage, prescribing, transcription, dispensing, administration, disposal, regulatory requirements, monitoring, documentation, and supervising others). Identify and utilize human, financial, and physical resources to optimize the medication-use process. Apply standards, guidelines, best practices, and established processes related to safe and effective medication use. Utilize continuous quality improvement techniques in the medication-use process. Develop professional documents pertinent to organizational needs (eg, monographs, policy documents). <p>Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Work with individuals of other professions to establish and maintain a climate of mutual respect and shared values. Use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations. Communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease. Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient/population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable. <p>Assess factors that influence the health and wellness of a population and develop strategies to address those factors.</p> <p>Example objectives^b</p> <ul style="list-style-type: none"> Identify personal, social, economic, and environmental factors that influence individual and population health and wellness. Describe advocacy approaches and efforts that impact individual and population health and wellness. Outline the steps for conducting a community health needs assessment. Collect and interpret population-based health and wellness qualitative and quantitative data to assess the needs of a patient population and satisfaction of care. Evaluate the existing approaches and suggest tailored interventions to maximize health and wellness. Participate in the development and/or implementation of preventive care strategies for a population (eg, risk/needs assessment, risk reduction, screening, and education).

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Table 1 (continued)

Domain	Subdomain #	Subdomain	One word descriptor	Outcome description
3 Attitudes	2-9	Leader-ship	Leader	<p>Demonstrate the ability to influence and support the achievement of shared goals on a team, regardless of one's role. Example objectives^b</p> <ul style="list-style-type: none"> • Determine when it is appropriate to use leadership skills, management skills, or both. • Demonstrate understanding of one's role in a team-based situation, including taking responsibility for a leadership or supporting role, when appropriate. • Explore the history (eg, successes and challenges) of a team before implementing changes. • Develop trusting relationships, actively listen, and value diverse perspectives to promote collaboration and teamwork. • Use persuasive communication when necessary. • Engage team members by building shared goals, gathering input or feedback, utilizing individual strengths, and managing conflict to promote team functionality. • Identify and address factors that affect team morale and performance.
	3-1	Self-awareness	Self-aware	<p>Examine, reflect on, and address personal and professional attributes (eg, knowledge, metacognition, skills, abilities, beliefs, biases, motivation, help-seeking strategies, and emotional intelligence that could enhance or limit growth, development, & professional identity formation). Example objectives^b</p> <ul style="list-style-type: none"> • Use metacognition to understand and regulate one's own thinking and learning. • Demonstrate motivation (eg, desire to learn, attention, interest, habits of mind, persistence, flexibility) during didactic and experiential activities. • Identify, create, implement, evaluate, and modify plans, using available resources (eg, career counselors, mentors) as needed, for personal and professional development for the purpose of individual growth. • Recognize, correct, and learn from errors. • Select and use constructive coping strategies or help-seeking behaviors (personal, professional, or academic support) to manage stress and improve well-being. • Utilize elements of emotional intelligence when working with others. • Reflect on the evolution of one's own professional identity formation during the doctor of pharmacy program and how it will continue to evolve across one's career.
	3-2	Professionalism	Professional	<p>Exhibit attitudes and behaviors that embody a commitment to building and maintaining trust with patients, colleagues, other health care professionals, and society. Example objectives^b</p> <ul style="list-style-type: none"> • Demonstrate altruism, integrity, trustworthiness, flexibility, compassion, inclusiveness, and curiosity. • Display preparation, initiative, and accountability consistent with a commitment to adding value and/or a commitment to excellence. • Conduct activities and fulfill responsibilities in a legal, moral, and ethical manner. • Describe the impact of one's actions (positive or negative) on how the profession is perceived by patients, other health care providers, and society. • Navigate how to balance between responsibility to self and others, seeking mentoring if needed. • Describe the pharmacy profession's core values and beliefs outlined in the Oath of a Pharmacist and how they contribute to professional identity formation.

^a Example objectives are outcomes that can be used for students to demonstrate the cohort of knowledge, skills, or attitudes within the educational outcome.

^b Colleges or schools of pharmacy can use the example objectives as written, or modify, expand, or edit them to meet local needs, as these are not designed to be prescriptive.

^c A comprehensive referenced version of Table 1 can be found in the original manuscript by Medina and colleagues.⁴

^d A glossary of terms and definitions can be found in Appendix 1 and a comprehensive referenced version of the glossary can be found in the original manuscript.⁴

Table 2Curricular Outcomes and Entrustable Professional Activity EPAs and Example Tasks. ^{a,b,c,d}

Activity
<p>1. Collect information necessary to identify a patient’s medication-related problems and health-related needs.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Collect a history from a patient or caregiver. · Collect a medication history from a patient or caregiver. · Collect a patient’s experience with medication. · Collect information related to barriers for patients to take their medication(s). · Collect objective information from the patient (e.g., physical exam, point of care testing). · Collect data from a patient’s electronic health, digital health, or medication record.
<p>2. Assess collected information to determine a patient’s medication-related problems and health-related needs.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Assess the indication of the medication treatment plan. · Assess the safety of the medication treatment plan including drug interactions. · Assess the effectiveness of medication treatment plans, including existing, previous, and new medications. · Assess the alignment of the medication plan with the patient’s goals, needs, abilities, values, and beliefs. · Assess the relative priority of each health-related need of the patient to create a prioritized problem list. · Assess if a patient requires a referral for their health-related needs. · Assess whether a patient is eligible for CDC-recommended immunizations.
<p>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.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Create person-centered treatment goals · Create a prioritized list of evidence-based and patient-centered treatment options to discuss with members of the healthcare team/patient/caregiver(s). · Create a person-centered treatment plan. · Create a plan to mitigate the risk of drug interactions and polypharmacy. · Create a treatment plan that incorporates potential strategies to minimize cost for the patient, such as formulary review, patient assistance programs, medication discount programs. · Create a plan to monitor the safety and efficacy of the treatment plan. · Create an individualized education plan for the patient and/or caregiver.
<p>4. Contribute patient specific medication-related expertise as part of an interprofessional care team.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Explain a pharmacist's role and responsibilities to a healthcare team. · Apply the PPCP as a member of an interprofessional team · Communicate a patient’s medication-related problem(s) to the healthcare team. · Provide recommendations to the health care team to resolve and/or monitor medication-related problems. · Provide evidence-based drug information to the health care team

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Table 2 (continued)

<p>5. Answer medication related questions using scientific literature.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Ask clarifying questions to identify and address the true question. · Perform a systematic search of tertiary, secondary, and primary resources. · Identify and retrieve high-quality scientific literature. · Analyze scientific literature. · Provide a written or verbal response to the true question, including findings and recommendations.
<p>6. Implement a care plan in collaboration with the patient, others trusted by the patient, and other health professionals.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Initiate, modify, or discontinue medication therapy · Present necessary information to a colleague during a handoff or transition of care.²⁵ · Schedule follow-up care as needed (e.g., labs or tests, follow-up appointments). · Document the findings, recommendations, plan, and pharmacy services provided. · Discuss the care plan with a patient and/or others trusted by the patient.²⁵
<p>7. Fulfill a medication order.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Enter an order or prescription into an electronic health or pharmacy record system. · Perform calculations required to compound, dispense, and administer medications. · Perform a prospective drug utilization review. · Adjudicate a third-party claim. · Identify and manage drug therapy problems. · Consider formulary preferred medications when making recommendations. · Complete an authorization process for a non-preferred medication. · Assist a patient to acquire medication(s) through support programs. · Prepare non-sterile and/or sterile medications. · Perform a quality assurance check on prepared medications prior to dispensing. · Dispense and administer a product including injectable medications and immunizations. · Adhere to state and federal laws/regulations and site quality and safety procedures.
<p>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.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Provide education and self-management training to the patient or caregiver. · Assess the learning needs of a patient and others trusted by the patient. · Select a method for providing education in the given environment. · Actively engage the patient in the education session. · Identify, select, or develop supportive education materials (e.g., written, models, demonstration devices, videos). · Adapt the terminology and verbal delivery of information. · Determine the effectiveness of education provided by assessing a patient's understanding and/or their ability to demonstrate the technique. · Reinforce key points, correct misunderstandings, or address gaps with the patient as needed.

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Table 2 (continued)

<p>9. Monitor and evaluate the safety and effectiveness of a care plan.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Collect monitoring data at the appropriate time interval(s). · Evaluate the selected monitoring parameters to determine the therapeutic and adverse effects related to the treatment plan. · Recommend modifications or adjustments to an existing medication therapy regimen based on patient response.
<p>10. Report adverse drug events and/or medication errors in accordance with site specific procedures.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Identify factors of system(s) (e.g., personnel, infrastructure, interfaces) associated with errors or risk of errors. · Determine points of intervention within system(s) to prevent or minimize medication-related errors. · Report and document adverse drug events and medication errors to stakeholders.
<p>11. Deliver medication or health-related education to health professionals or the public.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Lead a discussion regarding published primary literature and its application to patient care (e.g., journal club). · Develop and deliver a verbal, digital, or written medication or health-related educational program to health professional(s), a community, or other groups.
<p>12. Identify populations at risk for prevalent diseases and preventable adverse medication outcomes.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Perform a screening assessment to identify patients at risk for prevalent diseases in a population and triage, when needed. · Evaluate individual and/or aggregated patient data to determine patients or populations at risk for a disease.
<p>13. Perform the technical, administrative, and supporting operations of a pharmacy practice site.</p> <p><u>Example Tasks*</u></p> <ul style="list-style-type: none"> · Execute pharmacy policies and procedures. · Delegate work activities to pharmacy team members. · Provide formative feedback on pharmacy team dynamics, workflow, processes, and operations. · Manage pharmacy workflow to ensure efficiency and safety. · Use technology to support the pharmacy workflow. · Execute pharmacy quality improvement activities. · Procure inventory to ensure continued pharmacy operations. · Prepare for regulatory visits and inspections.

Abbreviations: EPA, Entrustable Professional Activity.

^a EPAs are activities not assessments; EPAs delineate essential tasks of a pharmacist that a PharmD graduate can be entrusted with. Example tasks are activities that can be used for students to demonstrate the cohort of skills within the EPA.

^b EPAs 1–10 are aligned with the Pharmacist Patient Care Process and colored according to the Pharmacist Patient Care Process steps.¹¹

^c Colleges or schools of pharmacy can use the example tasks as written, or modify, expand, or edit them to meet local needs, as these are not designed to be prescriptive.

^d A comprehensive referenced version of Table 2 and the glossary of definitions and terms can be found in the original manuscript.⁴

separately from the revised COEPA document and preamble to reinforce this intention.⁴ This current guidance article is the citable reference for individuals discussing the example objectives and tasks.

The goal of this article is to address one of the 2022–2023 AAC's charges, which was to outline revisions to the previous CAPE educational outcomes and EPAs and offer the Academy a guidance document for the new COEPA 2022 document. This COEPA guidance document includes

specific information related to using EOs and EPAs and also includes example objectives and example tasks, as well as information about the relationship between EOs and EPAs (Table 3).^{1–3} A glossary of the EO and EPA terms can be found in Appendix 1, as well as in the original manuscript by Medina and colleagues that includes citations.⁴ A crosswalk of changes from CAPE 2013¹ to COEPA 2022⁴ and EPAs 2016^{2,3} and COEPA 2022⁴ is designed to provide additional guidance (Tables 4 and 5). One other area of

Table 3Relationship Between Curricular Outcomes and Entrustable Professional Activity 2022 EOs,⁴ EPAs,⁴ PPCP,^{11, a} and the NAPLEX Blueprint.¹⁶

1. Collect information necessary to identify a patient's medication-related problems and health-related needs	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Learner, Problem solver, Communicator, Ally, Provider, Collaborator	Area 1, 4
2. Assess collected information to determine a patient's medication-related problems and health-related needs.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Learner, Problem solver, Ally, Provider	Area 1, 3, 4
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.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Learner, Problem solver, Communicator, Ally, Provider, Advocate, Collaborator, Leader	Area 2, 3, 4
4. Contribute patient specific medication-related expertise as part of an interprofessional care team.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Communicator, ally, advocate, collaborator, leader	Area 1, 2, 6
5. Answer medication related questions using scientific literature.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem solver, communicator, provider, collaborator, leader	Area 1, 3, 4
6. Implement a care plan in collaboration with the patient, others trusted by the patient, and other health professionals.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem solver, communicator, educator, ally, provider, advocate, collaborator	Area 1, 2, 3, 4
7. Fulfill a medication order.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>

(continued on next page)

Table 3 (continued)

Provider, advocate, steward, collaborator, leader	Area 3, 4, 5
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.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem solver, communicator, ally, provider, advocate, collaborator, promoter, leader	Area 2, 3, 5, 6
9. Monitor and evaluate the safety and effectiveness of a care plan.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem solver, communicator, ally, provider, collaborator	Area 1, 2, 3, 4
10. Report adverse drug events and/or medication errors in accordance with site specific procedures.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem-solver, communicator, steward, collaborator, promoter	Area 3, 6
11. Deliver medication or health-related education to health professionals or the public.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem solver, communicator, collaborator, promoter	Area 1, 3, 6
12. Identify populations at risk for prevalent diseases and preventable adverse medication outcomes.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem solver, promoter	Area 6
13. Perform the technical, administrative, and supporting operations of a pharmacy practice site.	
<i>Related EOs</i>	<i>Related Area on NAPLEX</i>
Problem solver, communicator, steward, leader	Area 4, 5, 6

Abbreviations: EO, educational outcome; EPA, Entrustable Professional Activity; NAPLEX, North American Pharmacist Licensure Examination; PPCP, Pharmacist Patient Care Process.

^a EPAs 1–10 are aligned with the PPCP and colored according to the PPCP steps.¹¹

guidance relates to a question programs may have, which is when to update their existing programmatic EOs and EPAs to be in alignment with COEPA. For programs that have an ACPE site visit prior to 2025, the AAC encourages those programs to continue to follow current ACPE 2016 standards. Programs with accreditation visits after 2025 can use guidance from the updated 2025 ACPE Standards.

A second 2022–2023 AAC charge was to provide ACPE with a list of recommendations compiled from key interested and affected parties related to the ACPE Standards Revision; some of those recommendations are

included below as they relate to COEPA guidance for the Academy.¹⁰ The 2023 AAC Report includes the full list of the compiled ACPE recommendations.¹⁰

2. EOs Guidance

COEPA EOs should be considered the minimum standard for all Doctor of Pharmacy programs. EOs are intended to guide the design of didactic and skills lab portions of the curriculum for PharmD

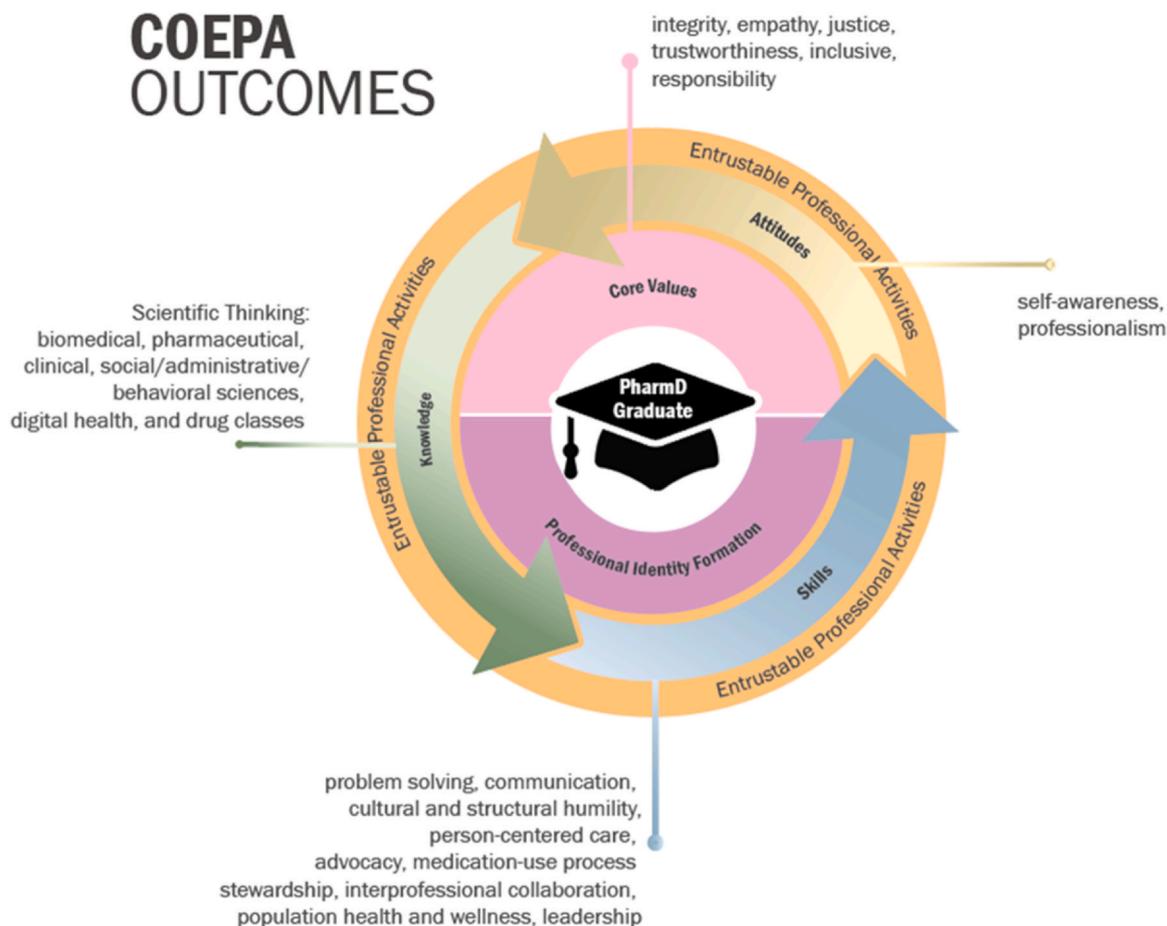


Figure. Diagram of the relationship of COEPA EOs Knowledge, Skills, and Attitudes (KSAs) to entrustable professional activities, professional identity formation, and core values. COEPA, Curricular Outcomes and Entrustable Professional Activities; PharmD, doctor of pharmacy.

graduates in the United States, however, both EOs and EPAs should be integrated throughout the experiential setting. Although the COEPA EOs are the minimum standard, programs can create additional EOs or increase the taxonomy level of expectation for their graduates to highlight areas of programmatic strength or specialization. For example, if the verb in the 2.9 leadership subdomain phrase, “demonstrate the ability to influence” is considered too low-level, programs could revise the description with a higher-level verb eg, “create shared goals”. However, programs can use the EOs as written and do not need to add or increase the EOs unless they choose to do so. If programs choose to add additional EOs or increase existing EOs, they should create a crosswalk/map to link their modified EOs to the COEPA EOs. Similarly, programs should not reduce or revise the EOs except to add additional EOs. Specifically, programs should also not change the domain names, subdomain names, one-word descriptors, and subdomain descriptions. For example, the AAC renamed the subdomain 2.4 from patient-centered care (individuals in the healthcare system) to person-centered care (individuals not in the health care system yet) in an effort to be inclusive; the new subdomain name should not be altered.⁴ The AAC created a crosswalk of changes from CAPE 2013 to COEPA EOs 2022 to help stakeholders understand the changes that have been made to the EOs from the previous CAPE version (Table 4).

3. EPA Guidance

Applicable EPAs should be employed in required core experiences (ie, Introductory or Advanced Pharmacy Practice Experiences [IPPEs and APPEs]) in the experiential setting by all Doctor of Pharmacy programs and the COEPA EPAs should be considered the minimum

standard. EPAs, which are activities (not assessments), delineate the essential tasks of a pharmacist that a PharmD student can be entrusted to conduct. EPAs and EOs should be integrated throughout the experiential setting. Programs should note that COEPA EPAs 1–10 are aligned with the Pharmacist Patient Care Process.¹¹

Many EPAs may not be applicable to IPPEs. IPPEs may focus more on drug distribution process and pharmacy management operations with less clinical, direct patient-care emphasis. In comparison, the combination of student's APPEs across the curriculum (vs within each APPE) would include all the EPAs and expected entrustment levels would be higher than on IPPEs.

While the COEPA EPAs should be considered the minimum standard, programs can create additional EPAs or increase the level of expectation for their graduates to highlight areas of strength, specialization, and/or their program mission. If programs choose to add or increase a COEPA EPA(s), they should create a crosswalk/map to link their modified EPAs to the COEPA EOs and EPAs. Similar to the COEPA EOs, the COEPA EPAs are regarded as the minimum standard therefore descriptions should not be renamed or revised, except to add additional EPAs or increase the level. The AAC created an EPA crosswalk of changes from EPA 2016 to COEPA EPAs 2022, which can be found in Table 5.

Programs should determine individual student requirements to pass the IPPE or APPE, which includes EPAs and other activity criteria. While programs are encouraged to assess students' level of entrustment with each EPA in the experiential setting, EPAs should be part of an experiential portfolio of assessments. Additional tools (such as rubrics for taking medication histories or evaluating journal club presentations) can be used to assess students and provide them with formative and summative feedback related to specific EOs and other performance-based activities during IPPEs or APPEs. Elective

Table 4
COEPA 2022 EOs and CAPE 2013 Crosswalk.

COEPA 2022 EOs domain and subdomain	CAPE 2013 (Action in COEPA to CAPE 2103 - Same, deleted, revised, merged)	COEPA one-word descriptor	CAPE one-word descriptor
Domain 1 - Knowledge	Same domain as in CAPE 2013.		
1.1 Scientific thinking	Same subdomain 1.1 Learner, now includes elements of critical thinking and scientific literature. Subdomain label was changed.	Learner	Learner
Domain 2 - Skills	Merged skills domains 2 (Essentials for Practice and Care [Pharmacist specific skills]) and 3 (Approach to Practice and Care [General Skills for Healthcare Professionals]) into one new skills domain. Reordered subdomains to reflect frequency and order of use.		
2.1 Problem solver	Revised from 3.1 Problem solver, now includes innovative mindset elements (formerly 4.3 innovator) and critical thinking.	Problem solver	Problem solver
2.2 Communication	Revised from 3.6 Communicator, now includes educator elements (formerly 3.2 educator) and written communication, technology, and identifying and addressing communication barriers.	Communicator	Communicator
2.3 Cultural and structural humility	Revised from 3.5 Cultural sensitivity, now includes mitigating health disparities and navigating diversity, equity, inclusion issues. Outcome written at a higher level. One-word descriptor changed.	Ally	Includer
2.4 Person-centered care	Revised from 2.1 Patient-centered care, now explicitly aligned with the pharmacist patient-care process. Subdomain label was changed.	Provider	Caregiver
2.5 Advocacy	Revised from 3.3 Patient advocacy by expanding focus from patients only to include the pharmacy profession within the healthcare setting and community, state, or national level, which were elements formerly addressed in 4.4 Professionalism.	Advocate	Advocate
2.6 Medication-use process stewardship	Revised from 2.2 Medication-use systems management to decrease emphasis on managing and instead focus on optimizing patient outcomes as well as the environmental impact of medications.	Steward	Manager
2.7 Interprofessional collaboration	Revised from 3.4 Interprofessional collaboration to include emphasis on core interprofessional competencies.	Collaborator	Collaborator
2.8 Population health and wellness	Revised by merging 2.3 Health and Wellness and 2.4 Population-based care to highlight areas of overlap. Outcome written at a higher level.	Promoter	Provider and promoter
2.9 Leadership	Revised from 4.2 Leader. Moved from the attitudes domain to the skills domain.	Leader	Leader
Domain 3 - Attitudes	Revised domain name and numbering from Domain 4 Personal and Professional Development to Domain 3 Attitudes. Also the number of subdomains was reduced in this domain 3 by merging innovator into problem solver and moving leader into skills domain.		
3.1 Self-awareness	New numeric label from 4.1 to 3.1 because Domains 2 and 3 were merged. Outcome written at a higher level and added elements of emotional intelligence and professional identity formation.	Self-aware	Self-aware
3.2 Professionalism	Revised from 4.4 Professionalism. Removed advocacy elements. Provided direct association to the Oath of a Pharmacist.	Professional	Professional

Abbreviations: CAPE, Center for the Advancement of Pharmacy Education; COEPA, Curricular Outcomes and Entrustable Professional Activity; EO, educational outcome.

experiences, including non-direct patient-care experiences, may require alternative forms of assessment outside of the EPAs to evaluate the learning experiences. It is important to note that the Academy is still learning the most effective ways to apply and assess the EPAs, therefore assessment recommendations are based on the evidence available to date and are informed by the more extensive work from colleges and schools of medicine.¹⁷ The AAC encourages programs to publish their ongoing EPA research and scholarship to further inform implementation and assessment processes (eg, assessment, curriculum development, feedback, and faculty/preceptor development).

Programs should use an entrustment scale to assess EPAs in the experiential setting. Preceptors should select an entrustment scale and assess learners prospectively to determine what learners can be trusted with on future activities during the experiential experience.^{18,19} The AAC created and published an updated entrustment scale in the Journal,⁴ but other entrustment scales exist^{18–20} such as scales with sublevels.¹⁹ Preceptors should use an entrustment scale to provide EPA-based formative feedback and assessment data to help the learner become more independent, with reactive supervision, not independence, as the goal level of entrustment for APPEs.^{4,19}

Whereas the “observe only entrustment level” would not be an acceptable goal for the end of an APPE, it may be the most appropriate goal level of entrustment in IPPEs. In some instances, students may be delivering immunizations on IPPEs, and a “direct supervision entrustment level” may be expected.⁴

A pass/fail approach to grading is encouraged for EPA-based assessments instead of traditional grading scales (ie, A, B, C, D, F) due to potential grade inflation and/or over-emphasis on the letter grade achieved rather than actual attainment of the skill. In addition,

programs should not assess longitudinal progression of entrustment for individual students across the experiential curriculum (experiential experience to experiential experience) due to the diversity of experiences across required core experiences. Instead, entrustment levels on each experience should be evaluated separately from each other.

3.1. Example Objectives and Tasks Guidance

Programs must document example objectives and example tasks to operationalize EOs and EPAs. The example objectives for all 12 EOs (Table 1) and the example tasks for all 13 EPAs (Table 2) were categorized as examples and were created as guidance for the Academy, not requirements, in an effort to increase flexibility for individual programs so they would have the ability to differentiate their curricula, while still meeting the minimum requirements set by COEPA. It is important to note these examples may be used by colleges and schools of pharmacy to establish the depth and breadth of expected performance for each EO and EPA. However, they are not intended to be prescriptive across all PharmD programs. Overall, while these examples are intended to be complete, programs can use the examples as written, modify them, or create their own to fit the goals or strengths of their institution/program. Regardless of which EO example objectives and EPA example tasks a program uses, they must be able to document and map them to an existing EO or EPA.

3.2. The Relationship Between EOs and EPAs

To provide additional guidance to the Academy, the relationship between EOs and EPAs across all learning settings was also outlined by

Table 5
COEPA 2022 EPAs and EPA 2016 Crosswalk.

COEPA 2022 EPAs* (Linkage between new COEPA EPA # and EPA 2016 #)	EPA 2016 (Action in COEPA to EPA 2016 - Same, Deleted, Revised, Merged)	PPCP[^] (Link to PPCP)
No Domains used in COEPA EPAs Color-coded EPAs 1-10, which align with various steps of the PPCP.	Deleted the 6 Domain Labels (Patient Care Provider, Interprofessional Team Member, Population Health Promoter, Information Master, Practice Manager, Self-Developer)	n/a
1. Collect information necessary to identify a patient’s medication-related problems and health-related needs.	Same in wording and order as EPA 2016.	Collect
2. Assess collected information to determine a patient’s medication-related problems and health-related needs.	Same order as EPA 2016, revised verb “analyze” to “assess” to align with the PPCP.	Assess
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.	Same order as EPA 2016, revised beginning of the sentence to remove “establish patient-centered goals” in order to emphasize the discrete task of creating care plans. Also included “others trusted by the patient” and “to optimize pharmacologic and nonpharmacologic treatment.”	Plan

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Table 5 (continued)

<p>4. Contribute patient specific medication-related expertise as part of an interprofessional care team.</p>	<p>Revised an example task from EPA 6 “collaborate as a member of an interprofessional team.” It was elevated to an EPA in COEPA 2022 because it specifically described a pharmacists’ contributions to an interprofessional team, which can be differentiated from other professions contributions to the team.</p>	<p>Plan</p>
<p>5. Answer medication related questions using scientific literature.</p>	<p>Revised from EPA 12 in the information master domain “use evidence-based information to advance patient care”. It was edited to focus on a specific observable task. It was mapped to the “plan” step of the PPCP, as information that results from this task will impact the development of patient-specific treatment plans.</p>	<p>Plan</p>
<p>6. Implement a care plan in collaboration with the patient, others trusted by the patient, and other health professionals.</p>	<p>Revised EPA 4 wording for “caregiver” to “others trusted by the patient” based on feedback from the Academy to be more inclusive of others that the patient would want to include in discussions.</p>	<p>Implement</p>
<p>7. Fulfill a medication order.</p>	<p>Moved EPA 14 into the PPCP-related EPAs to emphasize this task is an important component of the implement step of the PPCP.</p> <p>The supporting tasks were updated to include dispensing and administering injectable medications and immunizations, which was a modification of EPA 10 “ensure that patients have been immunized against preventable diseases”.</p>	<p>Implement</p>

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Table 5 (continued)

<p>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.</p> <p>(COEPA EPA #8 (and 11)=EPA 2016 (#11)</p>	<p>Revised EPA 11 “educate patients and professional colleagues regarding the appropriate use of medications” into two different EPAs. COEPA 2022 EPA 8 focuses on educating patients and more accurately describes the scope of education that can be provided by pharmacists to include medications, devices to administer medications, and self-monitoring testing.</p> <p>Elements of EPA 11 that focused on educating health professionals and the public are included in COEPA 2022 EPA 11.</p>	<p>Implement</p>
<p>9. Monitor and evaluate the safety and effectiveness of a care plan.</p>	<p>Revised EPA 5 “follow-up and monitor a care plan” to match the language of the PPCP.</p>	<p>Follow up: Monitor and evaluate</p>
<p>10. Report adverse drug events and/or medication errors in accordance with site specific procedures.</p>	<p>Revised an example task from EPA 8 “minimize adverse drug events and medication errors”. It was elevated as an EPA in COEPA 2022 to highlight the importance of this activity for pharmacists.</p>	<p>Follow up: Monitor and evaluate</p>
<p>11. Deliver medication or health-related education to health professionals or the public.</p>	<p>Revised EPA 11 “educate patients and professional colleagues regarding the appropriate use of medications” into two different EPAs. COEPA 2022 EPA 11 focuses on educating groups of people that include health professionals and the public. The education provided in this EPA is not intended to be directed towards an individual patient or query about an individual, but instead encompass general medication or health-related education.</p> <p>Elements of EPA 11 that focused on educating patients are included in COEPA 2022 EPA 8.</p>	<p>n/a</p>

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Table 5 (continued)

<p>12. Identify populations at risk for prevalent diseases and preventable adverse medication outcomes.</p> <p>(COEPA EPA #12=EPA 2016 #7 & 10)</p>	<p>Revised EPA 7 by changing patients to populations. Added the phrase “preventable adverse medication outcomes” to this EPA because it is a core professional activity conducted by pharmacists. An example would be Naloxone dispensing.</p> <p>This revision also encompasses the population-level elements of EPA 10 “ensure that patients have been immunized against preventable diseases”.</p>	n/a
<p>13. Perform the technical, administrative, and supporting operations of a pharmacy practice site.</p> <p>(COEPA EPA #13=EPA 2016 #13)</p>	<p>Revised EPA 13 “oversee the pharmacy operations for an assigned work shift” based on feedback from the Academy. This EPA was edited to more accurately describe tasks that are expected of a new pharmacy graduate. EPA 13 was previously too broad and could not be sufficiently observed during the short periods of time students are in practice settings for IPPE and APPE. The revised EPA is applicable to activities conducted by pharmacists regardless of practice setting.</p>	n/a

Abbreviations: COEPA, Curricular Outcomes and Entrustable Professional Activity; EO, educational outcome; EPA, Entrustable Professional Activity; NAPLEX, North American Pharmacist Licensure Examination; PPCP, Pharmacist Patient Care Process.

^aEPAs 1–10 are aligned with the PPCP and colored according to the PPCP steps.¹¹

^bTwo EPAs from 2016 were deleted (9 and 15). EPA 9 “maximize the appropriate use of medications in a population” was deleted because it is difficult to maximize medications for an entire population and the concepts of optimizing medications for individuals is included in COEPA 2022 EPAs 3–9. EPA 15 “create a written plan for continuous professional development” was deleted because it is not a discrete observable task.

the AAC. The Committee mapped the 13 EPAs to the EO skills domain (Table 3). The EPAs were not mapped to the knowledge and attitudes domains because these 2 domains are encapsulated across the 13 EPAs. The AAC conducted this mapping by having each Committee member map the EOs to the EPAs they perceived were related. The results were then collated and summarized in order to reach 100% Committee consensus regarding which EOs were related to each EPA. Discussions and voting were held for any items that did not have 100% agreement until consensus was reached. This mapping was conducted to demonstrate the relationship between EOs and EPAs to help identify the critical skills needed by a pharmacy student to achieve the desired outcomes upon graduation. Students need to use multiple EOs to complete an EPA effectively. The mapping in Table 3 can be used to help programs document how they introduce and advance students’ pharmacy skills across the didactic and experiential curriculum and for pharmacy students to identify areas for continued skills development. Table 3 also includes the relationship between EPAs, Pharmacists’ Patient Care Process, and the North American Pharmacist Licensure Examination

Competency Statements that the AAC created to help programs see how these elements relate.¹⁶ Programs can use this map as written, modify it, or create their own map to align with the goals or strengths of their particular institution/program.

4. Conclusion

The AAC has provided guidance for the Academy to implement COEPA 2022 which is based on the current evidence related to EOs and EPAs. EOs and EPAs are interrelated, and both should contribute to curricular design and assessment plans for doctor of pharmacy programs. EOs guide the design and assessment of the didactic and skills lab courses, while the EPAs should be used for the experiential curriculum. Example learning objectives and tasks were provided to guide colleges and schools of pharmacy in their curricular design and assessment. These examples can be adopted or customized to the desired heightened performance expectations and mission areas of each institution. EPAs are activities that are expected of new pharmacy

graduates and should be used along with an entrustment scale to provide prospective formative feedback on student performance of each activity. The AAC encourages the Academy to adopt and implement the EOs and EPAs and to share experiences through publications to collectively develop, implement, and assess these tools.

Author contributions

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Appendix A. Glossary*

1.1 Scientific Thinking (Learner) Definitions	<ul style="list-style-type: none"> • Foundational knowledge - outlined in ACPE Appendix 1 and include the biomedical, pharmaceutical, social/behavioral/ administrative, and clinical sciences as they pertain to the practice of pharmacy. • Biomedical sciences - the preprofessional sciences (e.g., chemistry, physics, biology) and biomedical (e.g., anatomy, physiology, biochemistry, immunology, biostatistics). • Pharmaceutical sciences – The pharmaceutical sciences build on principles introduced in the preprofessional biomedical sciences including pharmaceutics/biopharmaceutics, pharmacokinetics, pharmacology, toxicology, pharmacogenomics, medicinal chemistry, clinical chemistry, 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. • Social, behavioral, administrative sciences - the disciplines and concepts of public health, epidemiology, economics, financial 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. • 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. • Digital health –digital technologies that improve health and includes categories such as mobile health, health information technology, wearable devices, telehealth and telemedicine, personalized medicine, and tools such as mobile health apps and software.
2.1 Problem Solving Process (Problem Solver) Definitions	<ul style="list-style-type: none"> • Problem solving skills: Identify and define problems that have multiple considerations (and possibly more than one 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. • 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. • 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.
2.2 Communication (Communicator) AND EPAs 8 and 11 Definitions	<ul style="list-style-type: none"> • 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, considering health literacy and cognitive abilities, and empathizing. • Educating: Educating focuses on 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.
2.3 Cultural and Structural Humility (Ally) Definitions	<ul style="list-style-type: none"> • 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). • 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 vis-a` -vis structures, partner with other stakeholders to fill these gaps, and engage in self-reflection throughout these processes. • Health disparities - preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations. • Navigating – strategies provided by individuals or teams that reduce barriers to care. • Structures – The policies, economic systems, and other institutions (policing and judicial systems, schools, etc.) that have produced and maintain social inequities and health disparities, often along the lines of social categories such as race, class, gender, and sexuality. • Structural competency – The trained ability to discern how a host of issues defined clinically as symptoms, attitudes, or diseases (e.g., depression, hypertension, obesity, smoking, medication “non-compliance”, trauma, psychosis) also represent the downstream implications of several upstream decisions about such matters as health care and food delivery systems, zoning laws, urban and rural infrastructures, medicalization, or even about the very definitions of illness and health. • Social determinants of health – conditions in the environments where people are born, live, work, play, age, and worship that affect a wide range of health, functioning, and quality of life outcomes and risks. There are 5 key domains: social and community context, education, neighborhood and built environment, health and health care, and economic stability.

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2.4 Person-Centered Care (Provider)

Definitions

2.5 Advocacy (Advocate)

Definitions

2.6 – Medication-use Process Stewardship (Steward)

AND

EPA 3

Definitions

2.7 Interprofessional Collaboration (Collaborator)

Definitions

2.8 Population Health and Wellness (Promoter)

AND

EPA 12

Definitions

2.9 Leadership (Leader)

Definitions

3.1 Self-awareness (Self-aware)

Definitions

3.2 Professionalism (Professional)

Definition

- **Person-centered care** – A holistic approach to use with patients to be more inclusive. A broadened 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, that provides people with the high-quality care they need and improves health-care system efficiency and effectiveness.
- **Whole person care**- 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.
- **Patient** – 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.
- **Medication Specialist** – During the PharmD program students develop specialized knowledge in the safe and effective use of medications. However, a PharmD 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.
- **Pharmacist's Patient Care Process (PPCP)** – 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.
- **Advocacy** – The process by which the actions of individuals or groups attempt to bring about social and/or organizational change on behalf of a particular health goal, program, interest, or population.
- **Optimize medications** - Occurs when there is a blend between: 1) developing 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.
- **Medication Use System/Process** - A complex process comprised of medication prescribing, order processing, dispensing, administration, and effects monitoring (e.g., intended or unintended effects).
- **IPEC competencies** – There are four core competency domains: 1) values and ethics; 2) roles and responsibilities for collaborative practice; 3) interprofessional communication; and 4) teamwork and team-based care. The IPEC competencies address maintaining a climate of mutual respect and shared values; using knowledge of one's own role and those of other professions; communicating using a team approach; and appreciating team dynamics, relationship-building values, and teamwork principles.
- **Population-based care** - A comprehensive care approach where practitioners assess the health needs of a specific population, implement, and evaluate interventions to improve the health of that population, and provide care for individual patients in the context of the culture, health status, and health needs of the populations of which that patient is a member.
- **Leadership** - Leadership is a function of knowing yourself, creating a culture of trust and open communication, having a vision that is well communicated, empowering others, taking a broad view of situations, and forming strategic alliances. Leaders are compared to managers where there are some subtle differences.
- **Managers** are responsible for identifying, implementing, and overseeing resources to effectively accomplish specific projects or processes.
- **Metacognition** – a type of cognition that regulates thinking and learning and consists of 3 self-assessment skills including planning, monitoring, and evaluating.
- **Help seeking** - Assessing needs and finding assistance when a deficit is identified that is associated with academic success. Behaviors may include seeking professional counseling, meditating, exercising, or engaging in the arts.
- **Emotional intelligence** - The ability to identify and manage one's own emotions, as well as the emotions of others. It includes the skills of emotional awareness, or the ability to identify and name one's own emotions; the ability to harness those emotions and apply them to tasks like thinking and problem solving; and the ability to manage emotions, which includes both regulating one's own emotions when necessary and helping others to do the same.
- **Professional Identity Formation** - Involves internalizing and demonstrating the behavioral norms, standards, and values of a professional community, such that one comes to “think, act and feel” like a member of that community. Professional identity influences how a professional perceives, explains, presents, and conducts themselves.
- **Professionalism** – Includes the elements of adherence to ethical principles, effective interactions with patients and with people who are important to those patients, effective interactions with other people working within the health system, reliability, and commitment to autonomous maintenance and continuous improvement of competence and citizenship and professional engagement.
- Oath of a Pharmacist was revised in 2021.

*This glossary was previously published with all references included in Medina and colleagues.⁴

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