

AACP Curriculum Outcomes and Entrustable Professional Activities (COEPA) 2022
Report of the 2022-2023 Academic Affairs Standing Committee: Revising the Center for the Advancement of Pharmacy Education (CAPE)
Educational Outcomes and Entrustable Professional Activities

Table 1: Revised 12 Educational Outcomes (Domains, Subdomains, One Word Descriptor and Outcome Description)*

Domain	Sub-Domain #	Sub-Domain	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; and clinical sciences; drug classes; and digital health) . ^{16,20}
	2.1	Problem-solving Process	Problem-solver	Use problem solving ²¹ and critical thinking skills ²²⁻²³ , along with an innovative mindset ²⁴ , to address challenges and to promote positive change.
2 Skills	2.2	Communication	Communicator	Actively engage, listen, and communicate ²⁵ verbally, nonverbally, and in writing when interacting with or educating ²⁶ an individual, group, or organization.
	2.3	Cultural and Structural Humility ^{27,28}	Ally	Mitigate health disparities ²⁹ by considering, recognizing, and navigating ³⁰ cultural and structural factors ^{28,31} (e.g. social determinants of health ³² , diversity, equity, inclusion, and accessibility) to improve access and health outcomes.
	2.4	Person-centered Care ^{33,34}	Provider	Provide whole person care ³⁵ to individuals as the medication specialist ³⁷ using the Pharmacists' Patient Care Process ⁸
	2.5	Advocacy ³⁸⁻⁴⁰	Advocate	Promote the best interests of patients and/or the pharmacy profession within healthcare settings and at the community, state, or national level.
	2.6	Medication-use Process Stewardship	Steward	Optimize ⁴¹⁻⁴³ patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environmental impact of medication use systems . ⁴⁴
	2.7	Interprofessional Collaboration	Collaborator	Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies. ¹¹
	2.8	Population Health and Wellness	Promoter	Assess factors that influence the health and wellness of a population and develop strategies to address those factors. ⁴⁵
	2.9	Leadership ^{46,47}	Leader	Demonstrate the ability to influence and support the achievement of shared goals on a team, regardless of one's role.
3 Attitudes	3.1	Self-awareness	Self-aware	Examine, reflect on, and address personal and professional attributes (e.g., knowledge, metacognition , ^{48,49} skills, abilities, beliefs, biases, motivation, help-seeking strategies , ⁵⁰ and emotional intelligence ⁵¹ that could enhance or limit growth, development, & professional identity formation . ¹²⁻¹⁴
	3.2	Professionalism ⁵²	Professional	Exhibit attitudes and behaviors that embody a commitment to building and maintaining trust with patients, colleagues, other health care professionals, and society. ⁹

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

Table 2: Revised 13 ENTRUSTABLE PROFESSIONAL ACTIVITIES (EPAs)*^#

Activity
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. ⁴¹⁻⁴³
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. ²⁶
9. Monitor and evaluate the safety and effectiveness of a care plan.
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. ²⁶
12. Identify populations at risk for prevalent diseases and preventable adverse medication outcomes. ⁴⁵
13. Perform the technical, administrative, and supporting operations of a pharmacy practice site.

*EPAs are activities not assessments; EPAs delineate essential tasks of a pharmacist that a PharmD graduate can be entrusted with

^EPAs 1-10 are aligned with the **Pharmacist Patient Care Process** (PPCP) and colored according to the PPCP steps.⁸ See Figure 1. EPA 1 aligns with Collect, EPA 2 aligns with Assess, EPAs 3-5 aligns with Plan, EPAs 6-8 align with Implement, and EPAs 9 and 10 are Monitor.⁸

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

Table 3 Glossary

<p>1.1 Scientific Thinking (Learner) Definitions</p>	<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.¹⁶ • Biomedical sciences - the preprofessional sciences (e.g., chemistry, physics, biology) and biomedical (e.g., anatomy, physiology, biochemistry, immunology, biostatistics).¹⁶ • Pharmaceutical sciences – The pharmaceutical sciences build on principles introduced in the preprofessional biomedical sciences including pharmaceuticals/biopharmaceuticals, 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.¹⁶ • 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.¹⁶ • 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.¹⁶ • 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.²⁰
<p>2.1 Problem Solving Process (Problem Solver) Definitions</p>	<ul style="list-style-type: none"> • Problem solving skills: Identify 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.²¹ • 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.^{22,23} • 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.²⁴
<p>2.2 Communication (Communicator) AND EPAs 8 and 11 Definitions</p>	<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, and empathizing.²⁵ • 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.²⁶

<p>2.3 Cultural and Structural Humility (Ally) Definitions</p>	<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).²⁷ • 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.²⁸ • Health disparities - preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.²⁹ • Navigating – strategies provided by individuals or teams that reduce barriers to care.³⁰ • 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.²⁸ • 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.³¹ • 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.³²
<p>2.4 Person-Centered Care (Provider) Definitions</p>	<ul style="list-style-type: none"> • 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.^{33,34} • 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.³⁵ • 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.³⁶ • 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.³⁷ • 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.⁸ See Figure 1.

2.5 Advocacy (Advocate) Definitions	<ul style="list-style-type: none"> • 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.³⁸⁻⁴⁰
2.6 – Medication-use Process Stewardship (Steward) AND EPA 3 Definitions	<ul style="list-style-type: none"> • 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.⁴¹⁻⁴³ • Medication Use System/Process - A complex process comprised of medication prescribing, order processing, dispensing, administration, and effects monitoring (e.g., intended or unintended effects).⁴⁴
2.7 Interprofessional Collaboration (Collaborator) Definitions	<ul style="list-style-type: none"> • 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.¹¹
2.8 Population Health and Wellness (Promoter) AND EPA 12 Definitions	<ul style="list-style-type: none"> • 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.⁴⁵
2.9 Leadership (Leader) Definitions	<ul style="list-style-type: none"> • 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.⁴⁶ 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.⁴⁷
3.1 Self-awareness (Self-aware) Definitions	<ul style="list-style-type: none"> • Metacognition – a type of cognition that regulates thinking and learning and consists of 3 self-assessment skills including planning, monitoring, and evaluating.^{48,49} • 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.⁵⁰ • 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.⁵¹ • 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.¹²⁻¹⁴
3.2 Professionalism (Professional)	<ul style="list-style-type: none"> • 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

Definition	commitment to autonomous maintenance and continuous improvement of competence and citizenship and professional engagement. ^{52,53} <ul style="list-style-type: none">• Oath of a Pharmacist was revised in 2021.⁹
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Table 4. Entrustment Scale for Entrustable Professional Activities*

Level	Description
Observe only	Learner is permitted to observe only. Even with direct supervision, learner is not entrusted to perform the activity or task.
Direct Supervision	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.
Reactive Supervision	Learner is entrusted to perform the activity or task with indirect and reactive supervision. Learner can perform task without direct supervision by may request assistance. Supervising pharmacist is quickly available on site. Feedback is provided immediately after completion of activity or task.
Intermittent Supervision	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.
General Direction	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.

*Table adapted from reference 3. The expected performance level upon graduation from a PharmD 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 references 18-19.^{3,18,19}

Figure 1. The Pharmacists' Patient Care Process⁸

