

UAE PROFESSIONAL PHARMACY GRADUATES COMPETENCY FRAMEWORK

Pharmacy Academia

Introduction

On March 6th and 7th, 2019, the Commission for Academic Accreditation (CAA) organized a “Pharmacy Education Summit” attended by diverse representatives from all Colleges of Pharmacy across the United Arab Emirates (UAE), stakeholders from professional practice, and government regulators. The purposeful assembly of this team was to define competency Standards for professional Pharmacy programs which specifically refers to BSc in Pharmacy (**BPharm**) and Doctor of Pharmacy (PharmD) in the UAE which would combine emerging requirements of graduates of professional programs in pharmacy. The summit was followed by multiple regular meetings of Pharmacy programs leaders in the UAE facilitated by the CAA to discuss different aspects of Pharmacy education with two main themes; challenges imposed by the COVID-19 pandemics and a UAE Professional Pharmacy Graduates Competency Framework (Pharmacy Competency Framework).

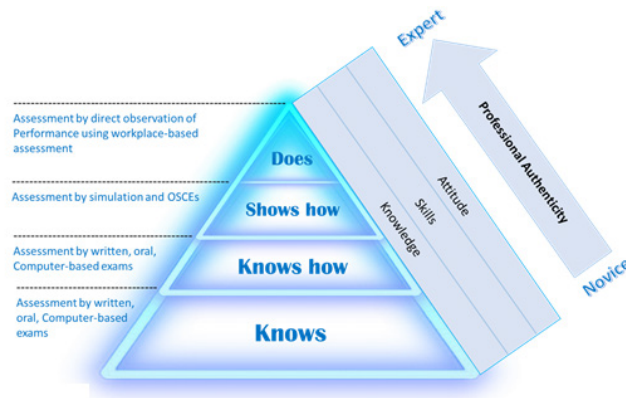
The resulting 2021 Competency Standards and associated educational outcomes were created by focusing on knowledge, skills, and behaviors that entry-level pharmacy graduates should possess as qualified healthcare providers. The Standards represent a structured framework intended to guide curricular design and reform, inspire innovation, and meet challenges facing pharmacy education and practice, in addition to mapping and /measuring program learning outcomes. They emphasize increased program expectations; motivating educators and students to strive for the highest level of professional preparation. The competencies in the framework are intended to be achievable by the end entry-level professional pharmacy program and measurable within the academic and practice environments that continue to evolve to meet the changes in the healthcare system. Although these Competency Standards are based on international frameworks, they are set within the context of the UAE’s National Qualifications Framework (QF*Emirates*) and are in line with the expectation of the CAA Standards for Institutional Licensure and Program Accreditation.

Aim and Rationale

This document aims to outline the professional competencies that must be adequately achieved and demonstrated by pharmacy students in the UAE higher education institutions to qualify for the award of a BPharm or PharmD leading to eligibility to apply for licensure as a competent pharmacist in the UAE. It should be emphasized that when the terms “pharmacy program” or “pharmacy students” are used, they mean BPharm or PharmD program or students.

The professional competency framework defines the basic levels of knowledge, skills, and attitudes that should be attained by graduates of the professional pharmacy programs. Proficiency levels in these areas are required to assure graduates’ preparedness to undertake the responsibilities expected with respect to the pharmacy profession and, as applicable, to the general health and wellbeing of individuals and communities within the scope of practice defined by the UAE’s laws and regulations concerning pharmacy practice. Each of the

competencies must be attained at the appropriate level on a scale ranging from the lowest level to the highest level (knows, knows how, shows how, does) according to Miller's pyramid of clinical competencies (Miller, 1990) and will typically be assessed through direct observation of workplace-based practice to confirm functional adequacy through action.



Miller's Pyramid

Methodology

The professional competency Standards for the pharmacy programs were developed through collaboration between the CAA at the Ministry of Education (MoE), the UAE Colleges of Pharmacy, the Ministry of Health and Prevention (MOHAP), and the MoE National Qualifications Center (NQC) at the MoE. The process included purposeful consultations with a diverse array of pharmacy education stakeholders including but not limited to pharmacy regulators, employers, Colleges of Pharmacy faculty, current students and alumni, as well as advisory board members and pharmacy practitioners

Creation of Pharmacy Competency Working group

During the periodic meetings between the CAA and the UAE Pharmacy Leaders, the CAA fostered the formation a Pharmacy Competency Working Group (PCWG) with membership from UAE Colleges of Pharmacy, Pharmacy practitioners and representatives from the CAA in October 2020. This working group was tasked to develop the Pharmacy Competency Framework. The initial inspiration and subsequent iteration of the Pharmacy Competency Framework was guided by a global array of pharmacy education frameworks that includes the Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes 2013, the Association of Faculties of Pharmacy of Canada (AFPC) Educational Outcomes 2017, and the International Pharmaceutical Federation (FIP) Education Initiatives: Pharmacy Education Taskforce, A Global Competency Framework, Version 1 (2012). The PCWG shared initial framework drafts with external stakeholders early in the development process to ensure a global perspective was maintained throughout the process. After several rounds of revisions and meetings, the PCWG provided its final draft of the Pharmacy Competency Framework in April 2021.

External Reviews

To ensure that the PCWG-developed professional pharmacy competency Standards were in line with best practices, the framework document was distributed to a select group of external reviewers and faculty from international Colleges of Pharmacy outside the UAE for review and feedback. The aim of this process was to ensure alignment of the competency framework document with international best practices and assure the quality of the graduates of the UAE Colleges of Pharmacy.

Continued Development

The PCWG will continue to undertake periodic reviews of the developed competency Standards of the Pharmacy Competency Framework and will continue to advise on curricular Standards for key aspects of Pharmacy Education such as Entrustable Professional Activities (EPA). The CAA is extremely grateful to all members of the PCWG, their parent organizations, the consulted stakeholders and external reviewers for their full engagement in the process of developing the professional competence Standards.

Outline of the competency framework

The professional competency Standards consist of four domains, each of which is defined by a collection of competency statements which articulate threshold expectations for BPharm and PharmD graduates. Prior to graduation, colleges of pharmacy will assess students on their level of performance in each competency and students will have to demonstrate a “does” achievement of performance when appropriate.

Paramount throughout the Standards is the expectation that students must demonstrate ethical and safe practice of pharmacy which is patient-centered and is within the legal and regulatory requirements for pharmacy practice in the UAE. In addition to foundational knowledge and pharmacy skills, emphasis is placed on the behavioral, communication, and social skills expected of pharmacy practitioners to ensure optimal patient outcomes.

Competency Domains and Associated outcomes

Definition of Pharmacy Practice

Pharmacy practice is the delivery and management of pharmacy services by capable pharmacists as members of intra- and inter-professional teams, demonstrating leadership, advocating and providing care for diverse patient populations, contributing to the health and wellness of individuals and communities, educating a broad range of constituents, and effectively managing a highly technological workplace including automation, informatics and innovation.

Domain 1 – Foundational Knowledge

- 1.1 Learner (Learner)** - Develop, integrate, and apply knowledge from the foundational sciences (i.e., pharmaceutical, biomedical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action and interactions, solve therapeutic problems, and advance population health and patient-centered care.

Competency statement, The Pharmacy graduate must

- 1.1.1 Develop and demonstrate depth and breadth of knowledge in pharmaceutical, biomedical, social, behavioral, administrative, public health, and clinical sciences relevant to the practice of pharmacy.
- 1.1.2 Articulate how knowledge in foundational sciences is integral to clinical reasoning; evaluation of advances in medicine; supporting health and wellness initiatives; and delivery of contemporary pharmacy services.
- 1.1.3 Integrate and apply knowledge from foundational sciences to explain how pharmaceutical interventions work, evaluate their potential value in individuals and populations, solve therapeutic problems and advance patient-centered care.
- 1.1.4 Critically analyze scientific literature related to drugs and disease, and emerging theories, information, and technologies that may impact patient-centered and population based care to enhance clinical decision making.

Domain 2 – Essentials for Practice and Care

- 2.1 Patient-centered care (Care Provider)** – Provide patient-centered care as the pharmacotherapy expert to diverse patients using the best available evidence and resources, taking into consideration patients’ their families, and their caregivers circumstances and beliefs.

Competency statement, The Pharmacy graduate must

- 2.1.1 Collect subjective and objective evidence related to patient, medications, allergies/ adverse reactions, and disease, by performing patient assessment, interview and medication reconciliation, and gathering data from patient medical records, other healthcare providers, and caregivers.
- 2.1.2 Interpret evidence, as per collaborative practice, to diagnose common conditions and identify, recommend and prescribe the most effective and safest treatment for the patient, and to formulate individualized evidence-based care plans and assessments.
- 2.1.3 Implement patient care plans including follow-up of outcomes and adjusting care plan as needed in collaboration with other healthcare providers.
- 2.1.4 Utilize telepharmacy, technology, informatics, and personalized medicine to maximize treatment efficacy, cost effectiveness and safety.

- 2.1.5 Compound extemporaneous and sterile formulations in accordance with applicable standards taking into consideration up-to-date technology.
- 2.1.6 Dispense medications, self-care devices and medical appliances.
- 2.1.7 Participate in population health management by evaluating and adjusting interventions to maximize health outcomes.
- 2.1.8 Deliver an evidence-based solution that takes account of a targeted patient's cost, treatment, access and satisfaction needs.
- 2.1.9 Demonstrate understanding and empathy with patients and their caregivers needs in delivery of pharmaceutical care.
- 2.1.10 Demonstrate ability to provide basic care in medical emergencies
- 2.1.11 Anticipate and recognize adverse drug reactions and apply the principles of pharmacovigilance.
- 2.1.12 Recognize and act on medicines misuse and abuse.

2.2 Medication use systems management (Manager) – Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

Competency statement, The Pharmacy graduate must

- 2.2.1 Identify the components of medication use systems.
 - 2.2.2 Recognize the role of the pharmacist in impacting the safety and efficacy of each component of medication use systems (i.e., procurement, storage, prescribing, transcription, dispensing, administration, risk management, monitoring and documentation).
 - 2.2.3 Utilize technology and artificial intelligence, human, economic, and physical resources to optimize the medication use systems.
 - 2.2.4 Manage pharmaceutical healthcare needs of patients during transitions of care.
 - 2.2.5 Apply standards, guidelines, best practices, established processes and continuous quality improvement techniques related to safe and effective medication use.
- 2.3 Health and wellness promotion (Promoter)** – Develop prevention, screening, intervention, and educational strategies for individuals and communities to maintain and improve health and wellness and to manage chronic diseases.

Competency statement, The Pharmacy graduate must

- 2.3.1 Use knowledge of public health to promote health, wellness and preventive care by risk management, screening, immunization, interventions and education.
- 2.3.2 Collaborate with other healthcare providers in managing and improving health for all patients.
- 2.3.3 Identify individual, social, economic, and environmental determinants of health to optimize health and wellness.
- 2.3.4 Identify applications of national public health challenges, priorities and policy including assessment of targeted patient population's needs.

Domain 3 - Approaches to Practice and Care

- 3.1 Ethical decision making and problem solving (Problem Solver)** – Identify problems; explore and prioritize potential strategies and design, implement, and evaluate a viable solution.

Competency statement, The Pharmacy graduate must

- 3.1.1 Apply moral and ethical values in professional judgments and decision making.
 - 3.1.2 Identify and define the ethical dilemmas and professional problems.
 - 3.1.3 Define goals and alternative goals when evaluating the problem.
 - 3.1.4 Gather all the relevant information (facts, knowledge, laws, standards and good practice guidance) prior to solving or making a professional decision.
 - 3.1.5 Use a structured approach in solving problems and making professional decisions.
 - 3.1.6 Explore multiple solutions by organizing, prioritizing, defending each possible solution and anticipating positive and negative outcomes taking into account professional, ethical and legal standards.
 - 3.1.7 Implement and record the most viable solution, including monitoring parameters, to measure potential intended and unintended consequences.
 - 3.1.8 Reflect on the solution implemented and its effects to improve future performance.
- 3.2 Educator (Educator)** – Educate all healthcare providers, patients, and general population by determining most effective and enduring way to impart knowledge and assess understanding.

Competency statement, The Pharmacy graduate must

- 3.2.1 Apply principles of patient counselling and health education.
 - 3.2.2 Conduct a learning needs assessment of constituents who would benefit from pharmacist-delivered education.
 - 3.2.3 Ensure educational content contains the most updated, authenticated, and relevant information for the intended audience.
 - 3.2.4 Implement effective strategies to impart knowledge and achieve definite objectives.
 - 3.2.5 Demonstrate the ability to coordinate educational efforts with other healthcare providers, when appropriate, to ensure a consistent, comprehensive, and team-based encounter.
- 3.3 Patient Advocacy (Advocate)** – Assure that patients’ best interests are represented and consider patient experience.

Competency statement, The Pharmacy graduate must

- 3.3.1 Empower and motivate patients to take responsibility for, and control of, their health.
 - 3.3.2 Assist patients in navigating the complex healthcare system.
 - 3.3.3 Ensure patients obtain the resources and care required in an efficient and cost-effective manner (e.g., triage to social and/or other healthcare services and pharmaceutical care plans).
 - 3.3.4 Identify the factors that affect patient satisfaction and assessment of a services.
- 3.4 Inter & intra professional collaboration (collaborator)** – Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

Competency statement, The Pharmacy graduate must

- 3.4.1 Contribute to a climate of shared values and mutual respect necessary to meet patient care needs.
- 3.4.2 Engage in a peer learning environment through constructive discussions and exchange of information.
- 3.4.3 Define clearly the roles and responsibilities for healthcare team members (other healthcare professionals and back-office members) to optimize outcomes for specific patient care encounters.

- 3.4.4 Communicate in a manner that values team-based decision making and shows respect for contributions from other areas of expertise.
- 3.4.5 Contribute to forming highly functioning teams that promote shared patient-centered problem solving.
- 3.5 **Cultural Sensitivity (Includer)** – Recognize the social determinants of health and traditional compassion to avoid bias and inequities in access to quality care.

Competency statement, The Pharmacy graduate must

- 3.5.1 Accommodate different cultures and their beliefs that may hold different views of the same issues.
 - 3.5.2 Communicate an understanding of the ways in which race, ethnicity, and/or gender are socially constructed.
 - 3.5.3 Assess relevant information and assertions for relevance, bias, stereotyping, manipulation, and completeness, and make any necessary adjustments.
 - 3.5.4 Assess a patients' and their caregivers' health literacy and modify communication strategies to meet their healthcare needs
- 3.6 Communication (Communicator)** – Effectively communicate orally and in written by identifying verbal and nonverbal cues when interacting with patients and healthcare providers.

Competency statement, The Pharmacy graduate must

- 3.6.1 Apply knowledge of human communication and language processes as they occur across various contexts.
- 3.6.2 Interview patients using an organized structure, specific questioning techniques (e.g., motivational interviewing), and medical terminology adapted for the audience.
- 3.6.3 Use effective interpersonal skills to establish rapport and build trusting relationships with patients, their caregivers, and healthcare providers.
- 3.6.4 Communicate assertively, persuasively, confidently, and clearly with patients, their caregivers, and healthcare providers.
- 3.6.5 Communicate with empathy when interacting with patients and their care givers.

- 3.6.6 Develop professional documents pertinent to organizational needs (e.g., reports, presentations, monographs, policy documents).
 - 3.6.7 Document patient care activities clearly, concisely, and accurately using appropriate medical terminology.
- 3.7 Professional statistics & calculation (Calculator)** – Perform precise calculations in pharmacy practice and interpretation of statistical data processing and evaluation.

Competency statement, The Pharmacy graduate must

- 3.7.1 Accurately interpret information and data employing various types of scientific therapeutics, calculations, and pharmaceutical science computations.
- 3.7.2 Utilize pharmaceutical science computations accurately and correctly in all pharmaceutical care settings to minimize medication error and increase the positive outcomes.
- 3.7.3 Perform calculations to adjust medication dosages in special populations

Domain 4 – Personal and Professional Development

- 4.1 Self-Awareness (Self-Aware)** – Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

Competency statement, The Pharmacy graduate must

- 4.1.1 Demonstrate emotional self-awareness and personal understanding.
- 4.1.2 Reflect on own learning and development needs
- 4.1.3 Display high self-confidence during professional practice and while working with others.
- 4.1.4 Demonstrate the ability of appropriate decision making and confidence-building behavior.
- 4.1.5 Exhibit emotional control yet showing empathy for the feelings of others.
- 4.1.6 Approach tasks with a desire to learn and develop professionally while recognizing own limitations of knowledge and skills.
- 4.1.7 Demonstrate the ability to embrace adversities and cope with changes in the workplace environment.

4.2 Leadership & Management (Leader) – Demonstrate responsibility for creating and achieving shared goals, regardless of position, and able to effectively manage resources, information and participate in organizational planning.

Competency statement, The Pharmacy graduate must

4.2.1 Identify characteristics that reflect leadership versus management.

4.2.2 Empower and motivate team members by actively listening, obtaining feedback, and encouraging collaboration.

4.2.3 Persuasively communicate team goals to help build consensus across the team.

4.2.4 Display self-management skills.

4.2.5 Demonstrate the ability to identify resource requirements and effectively manage those resources to assure continuity of services

4.3 Innovation & Entrepreneurship (Innovator) – Engage in innovative and entrepreneurial activities by using creative thinking to envision better and productive ways of accomplishing professional goals.

Competency statement, The Pharmacy graduate must

4.3.1 Demonstrate initiative when confronted with and addressing challenges.

4.3.2 Develop new ideas to enhance the quality of pharmaceutical care, add value to practice and overcome barriers.

4.3.3 Demonstrate innovative and entrepreneurial thinking in setting goals and strategies for own career goals

4.3.4 Discuss the economic and social value of innovation and entrepreneurship.

4.3.5 Apply entrepreneurial skills and risk-benefit analysis for implementation of innovative ideas within a simulated entrepreneurial activity.

4.4 Professionalism & Ethical Practice (Professional) – Exhibit behaviors and values consistent with the trust given to the profession by patients, other healthcare providers, and society.

Competency statement, The Pharmacy graduate must

- 4.4.1 Abide by local, national, and relevant international regulations and ethical codes governing pharmacy practice.
 - 4.4.2 Demonstrate altruism, integrity, trustworthiness, flexibility, and respect in all interactions.
 - 4.4.3 Display preparation, initiative, and accountability consistent with a commitment to excellence.
- 4.5 Research and Scholarship (Scholar)** – Engage in research and scholarly activities related to the healthcare and pharmaceutical practice.

Competency statement, The Pharmacy graduate must

- 4.5.1 Contribute to research question identification and study design.
- 4.5.2 Conduct individual or collaborative research including analysis, evaluation and dissemination of results.
- 4.5.3 Critically evaluate evidence-based literature resources and other information.

Implementation

Following approval of the professional Standards by the MoE, all the Colleges of Pharmacy in the UAE will be responsible for the implementation of these Standards within their undergraduate pharmacy programs. The CAA will monitor the implementation by the Colleges of Pharmacy through its processes for program accreditation. The timeline for implementation is that Colleges of Pharmacy will be expected to develop the curricula and assessment practices of their undergraduate programs sufficiently to allow full implementation by September 2022.

References

CAPE Educational Outcomes 2013. Available at:

<https://www.aacp.org/sites/default/files/2017-10/CAPEoutcomes2013%20%281%29.pdf>

FIP Education Initiatives: Pharmacy Education Taskforce, A Global Competency Framework, Version 1 (2012). Available at:

<https://www.fip.org/file/1412>

AFPC Educational Outcomes for first professional degree programs in Canada (2017). Available at:

https://www.afpc.info/system/files/public/AFPC-Educational%20Outcomes%202017_final%20Jun2017.pdf

Accreditation & Quality Assurance Commission for Higher Education Institutions, Hashemite Kingdom of Jordan.

Miller, G. E. (1990). The assessment of clinical skills/competence/performance. *Acad Med*, 65 (9 Suppl), S63-67.

Frank, J.R., Snell, L.S., Cate, O.T., Holmboe, E.S., Carraccio, C., Swing, S.R., Harris, P., Glasgow, N.J., Campbell, C., Dath, D., Harden, R.M., Lobst, W., Long, D.M., Mungroo, R., Richardson, D.L., Sherbino, J., Silver, I., Taber, S., Talbot, M. & Harris K.A. (2010). Competency-based medical education. Theory to practice. *Med Teach*. 32 (8):638-45.

The Pharmacy Competency Work Group (in Alphabetical order)

Representatives of the CAA:

- **Prof. Amjad Qandil:** Commissioner, CAA, UAE
- **Prof. Stephen Arkle:** Commissioner, CAA, UAE

Colleges of Pharmacy, UAE:

- **Prof. Sherief Khalifa:** Group Leader and Dean, College of Pharmacy & Vice Chancellor for Quality & Global Engagement, Gulf Medical University, Ajman, UAE.
- **Prof. Eman Abu-Gharbieh:** Professor of Pharmacology, College of Medicine, University of Sharjah, Sharjah, UAE.
- **Dr. Hala Afifi:** Associate Professor, City University College of Ajman, UAE
- **Prof. Mirza Biag:** Professor, Dubai Pharmacy College for Girls, Dubai, UAE.
- **Dr. Mohammad Ghattas:** Deputy Dean, College of Pharmacy, Al-Ain University, Abu Dhabi campus, UAE.
- **Prof. Salahdein Aburuz:** professor of Pharmacology, United Arab Emirates University, Al-Ain, UAE.
- **Prof. Sathvik Sridhar:** Professor & Chair, Department of Clinical Pharmacy and Pharmacology, College of Pharmaceutical Sciences, RAK Medical & Health Sciences University, RAK, UAE.

Professional Pharmacy Practitioner, UAE:

- **Dr. Osama Tabbara:** President, IVPN Network, Former Executive Director of Pharmacy, Cleveland Clinic Abu Dhabi, UAE.

Contributors to the Pharmacy Competency Framework:

- **Prof. Mohamed Y. Baniyas:** Director of the CAA and NQC and Advisor to H.E The Minister of Education, UAE
- **Dr. Dhayaneethie Perumal:** Commissioner, CAA, UAE
- **Mike Rouse:** Director of the ACPE International Services, USA

Abbreviations

PCWG	Pharmacy Commence Work Group
CAA	Commission for Academic Accreditation-MoE.
MoE	Ministry of Education.
MOHAP	Ministry of Health and Prevention.
NQC	National Qualifications Center - MoE.
QF<i>Emirates</i>	The Qualification Framework Emirates (2012).
ACPE	Accreditation Council for Pharmacy Education
AFPC	Association of Faculties of Pharmacy of Canada
FIP	International Pharmaceutical Federation
EPA	Entrustable Professional Activities

Glossary

Competency:

An observable ability, integrating multiple components such as knowledge, skills, values, and attitudes (Frank *et al.*, 2010).

Competent:

Possessing the required abilities in all domains in a certain context at a defined stage of education or practice (Frank *et al.*, 2010).

Entrustable Professional Activities:

Discrete, essential activities and tasks that all new graduates must be able to perform without direct supervision upon entering practice or postgraduate training.

Learning Outcomes:

Statements that specify what students will know, be able to do or be able to demonstrate when they have completed or participated in a course or program.

Endorsed by the CAA



مفوضية الاعتماد الأكاديمي
Commission for Academic Accreditation