



## **PHARM.D. STUDENT MANUAL**

### **REQUIRED & ELECTIVE ADVANCED PHARMACY PRACTICE EXPERIENCES (APPEs)**

**2013–2014**

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## Section I: Course Details

### A. Course Description

The 4<sup>th</sup> professional year of the Doctor of Pharmacy program consists of four 4-weeks Required Advanced Pharmacy Practice Experiences (APPEs) in the U.S. and five calendar months of Elective APPEs in Lebanon.

1. Four required APPEs in the United States:
  - PHA 670: Ambulatory Care
  - PHA 671: Community Pharmacy
  - PHA 672: Hospital or Health System Pharmacy
  - PHA 673: Inpatient/Acute Care General Medicine
  
2. Five elective APPEs in Lebanon:
  - PHA 650A: Academic Teaching
  - PHA 650B: Cardiology/CCU
  - PHA 650C: Critical Care
  - PHA 650D: Discharge Counseling
  - PHA 650E: Emergency Medicine
  - PHA 650F: Endocrinology
  - PHA 650G: Industrial Pharmacy
  - PHA 650H: Infectious Diseases
  - PHA 650I: Internal Medicine
  - PHA 650J: Patient/Medication Safety
  - PHA 650K: Nephrology
  - PHA 650L: Neurology
  - PHA 650M: Obstetrics and Gynecology
  - PHA 650N: Oncology
  - PHA 650O: Pediatrics
  - PHA 650P: Primary Care
  - PHA 650Q: Regulatory Affairs

### B. Course Relevance

The APPEs are designed to support the achievement of the professional competencies presented in the ACPE Standard No. 12:

1. Provide patient-centered care plan
2. Provide population-based care, through the ability to develop and implement
3. Population-specific, evidence-based disease management programs and protocols based upon analysis of epidemiologic and pharmaco-economic data, medication use criteria, medication use review, and risk-reduction strategies.
4. Manage human, physical, medical, informational, and technological resources, through the ability to ensure efficient, cost-effective use of these resources in the provision of patient care.

5. Manage medication use systems, through the ability to apply patient- and population-specific data, quality improvement strategies, medication safety and error reduction programs, and research processes to minimize drug misadventures and optimize patient outcomes; to participate in the development of drug use and health policy; and to help design pharmacy benefits.
6. Promote the availability of effective health and disease prevention services and health policy through the ability to apply population-specific data, quality improvement strategies, informatics, and research processes to identify and solve public health problems and to help develop health policy.
7. Communicate and collaborate with patients, care givers, physicians, nurses, other health care providers, policy makers, members of the community, and administrative and support personnel to engender a team approach to patient care.
8. Retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information and counseling to patients, their families or care givers, and other involved health care providers.
9. Demonstrate expertise in informatics.
10. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
11. Maintain professional competence by identifying and analyzing emerging issues, products, and services.

The APPEs will integrate, apply, reinforce, and advance the knowledge, skills, attitudes, and values developed through the other components of the curriculum. The objectives for each pharmacy practice experience and the responsibilities of the student, preceptor, and site will be detailed in the respective syllabi.

### **C. Learning Objectives**

Each experiential education rotation has its own learning objectives as detailed in the rotation syllabus. Students should become familiar with the specific learning objectives in the course of orientation to the experience and site. The Ability-Based-Outcomes for all rotations are based on the CAPE 2004 (Appendix). At least 7 out of 9 rotations must involve clinical/direct patient care activities.

### **D. Methods of Education**

The student will actively participate in pharmacy practice under the supervision of a preceptor who will guide the student's experience in different pharmacy practice settings.

Preceptors should provide close supervision of, individualized instruction, one-on-one guidance, significant interaction with students, case discussions, and assessment of student performance and critical thinking and provide role-modeling to students in pharmacy practice..

## **Section II: Experiential Education Sites**

### **A. Hospitals**

- Makassed General Hospital, Tareek Al-Jadida, Beirut
- Notre Dame Des Secours University Hospital, Blat, Byblos
- Rafik Hariri University Hospital, Jnah, Beirut
- Houston Methodist, Houston, TX, U.S.A
- University Medical Center-Rizk Hospital, Achrafieh, Beirut

## B. Community Pharmacies

- Walgreens Pharmacy, Houston, TX, USA
  - o Saint Luke's Location
  - o Houston Methodist Location
  - o Hermann Location
  - o Kirby Location

## C. Conflict of Interest

The School of Pharmacy strives to avoid circumstances or relationships that could adversely affect the student/faculty relationship and the desired outcomes. [Guideline 14.2 ACPE ]

To avoid any conflicts of interest, the following rules will be adhered to:

1. A student will NOT be placed in a practice site where the student has worked with or is a relative of the site preceptor.
2. A student will NOT be placed in a practice site where a student's relative provides supervisory authority over a preceptor.
3. A student must report to the Director of Experiential Education any other potential conflicts of interest due to personal, financial or other relationships.
4. Failure to notify the Director of Experiential Education of potential conflict of interest will result in repeating the rotation.

## Section III: Regulations

### A. Attendance

1. Students are expected to be at their assigned rotation site for a minimum of eight hours per day: Monday through Friday from 8:00 AM – 4:00 PM or later.  
*Time of arrival and departure may vary among sites, according to services and patient care rounds. Students should refer to their preceptors for rotation specific guidance.*
2. Absences from rotations must be made up (rearrangements made with preceptor) within the period of the assigned rotation (e.g. If you miss a day, you will come to the hospital the following Saturday). An incomplete grade will be given until you make-up the missed rotation days. When any absence occurs, the preceptor will notify the Director of Experiential Education and the Chair of Pharmacy Practice Department. Absences of 40 hours or more during a rotation may result in repeating the APPE at a later time.
3. Preceptor must be contacted personally as soon as possible in the event a student cannot report to the assigned site on a given day with the reason for absence. The preceptor may excuse the student for valid reasons (illness, family death, and accidents). Personal plans (vacations, picnics, weddings, parties, etc.) are NOT valid reasons for excuse and will not be accepted. All excused absences and the respective make-ups will be recorded for the student.
4. Each failure to notify the preceptor will result in up to 10% deduction of the final grade, which translates into a drop of up to one letter grade. Each failure to show up for the make-up will result in a 10% deduction which translates into a drop of one letter grade.
5. Students shall be required to attend all medical team activities (including morning and afternoon rounds) unless specifically excused by the preceptor. Any student missing these activities without preceptor permission will receive up to 10% deduction on final grade.

6. Students who arrive late or leave early to/from the hospital without the preceptor knowledge will receive up to 10 % deduction on the final grade and any repetition of the aforementioned activities will result in 5% deduction on the final grade on each repetition.
7. Students rotating in the United States will only observe U.S. Holidays Calendar.
8. Students rotating in Lebanon will observe LAU Experiential Education Calendar and make-up days for holidays.

## **B. Maintaining Professionalism**

During the clinical pharmacy practice experiences, students are expected to maintain the highest standard of professional behavior. This means:

1. Appearance and Personal Attire
  - a. Students should wear, at all times, a white lab coat, fully buttoned, with nametag that indicates "Pharmacy Student-LAU".
  - b. No jeans or sneakers are allowed. Failure to comply, students will be asked to go home to change and make-up for the missed time of going home.
  - c. Men should wear slacks and ties, and women should be appropriately and conservatively dressed. Comfortable walking shoes are suggested. No open toe shoes allowed for women.
  - d. Bags cannot be carried on rounds. Provision will be made depending on the site for storage of coats, bags etc. It is suggested that valuables not to be taken to the site.
  - e. All students must demonstrate adequate personal hygiene.
2. Psychosocial Skills
  - a. Students must interact/communicate politely and tactfully with preceptors, healthcare providers, staff and patients to engender a team approach to patient care. Likewise, students are expected to interact with other students professionally and with courtesy.
  - b. Students should expect to be treated professionally and with courtesy by faculty, preceptors and other healthcare providers.
  - c. Students and preceptors should attempt to resolve misunderstandings in a constructive manner.
  - d. Students should not hesitate to ask for assistance and/or clarification as needed from the preceptor. Mistakes due to overconfidence or failure to obtain clarification will be considered unprofessional conduct. Knowledge and acceptance of one's limitations is a vital skill.
  - e. Please refer to Domain IV on Professionalism and Collaboration with the Health Care Team (CAPE 2004).

## **C. Observance of Hospital Rules and Regulations**

All rules and regulations pertaining to the hospital must be observed. These will be explained at a briefing by the preceptor at the site. Improper conduct may result in disciplinary action by the school and university.

## **D. Confidentiality**

Medical records (charts) are private and legal documents. While medical records are used and handled in the course of work, it should be remembered that confidentiality is a must.

1. No writing or marks of any kind should be made on medical records (hard copy or electronic) unless authorized by the preceptor.
2. No names should be used in the preparation of written cases, notes, or monitoring sheets.
3. Discussion of any patient information designated outside patient care areas such as in elevators, hallways, and cafeteria is strictly prohibited.
4. Taking photos (as a way of gathering data for case discussions) of patients' medical records using smart phones, and to post patient information on Facebook or other social media forum is strictly prohibited.
5. Medical records must not be removed from the nursing station area.
6. Students are not allowed to request charts from the medical records department unless authorized by the preceptor.
7. Pharmacy students in experiential courses at the hospital/drug information center/ and community pharmacy practice sites in the U.S. and in Lebanon must abide by the Health Insurance Portability and Accountability Act (HIPAA).
8. All P4 students are expected to have completed an online HIPAA training in P1 and signed a confidentiality letter as required by the practice site.

Breaches of confidentiality can result in disciplinary action by the school and university.

## **Section IV: Description of Activities**

### **A. Patient Care Rounds**

1. Attend and actively participate in ward rounds and attending rounds according to the schedule of the service.
2. Attend relevant grand rounds and medical conferences.
3. Interview and obtain medication histories from all patients assigned by the pharmacy preceptor.
4. In addition to CAPE Appendix, Domain I, Categories A & B, gather the following information including, but not limited to:
  - a. Changes in patient status including: improved or worsened condition, discharge date, surgery, planned diagnostic procedures, and the results of those procedures.
  - b. Changes in nondrug therapy (e.g. dietary, socioeconomic, physical therapy, respiratory, occupational therapy).
  - c. Changes in medication therapy (e.g. new drug orders, discontinued orders, or changes in doses, route of administration, or duration).
  - d. When chemotherapy, perioperative medications, or intravenous solutions are needed.
  - e. Patient's understanding of medication, name strength and expected benefits and toxicities.
  - f. Projected discharge date, including any special teaching needs (e.g. home antibiotics or total parenteral nutrition).
  - g. Communicate to the unit pharmacists any information gathered from rounds if they are unable to attend.
5. Monitor drug therapy of all assigned patients. Maintain an up-to-date data base on each assigned patient according to Domain I of the CAPE Appendix attached to manual.
6. Apply the information obtained through the interviewing and monitoring process to:
  - a. Evaluate current drug therapy.
  - b. Anticipate and identify drug therapy problems.

7. Review each patient's therapeutic regimen on a daily basis **before rounds** to ensure understanding of the medications, dosages, routes of administration, efficacy, and potential drug interactions.
8. Provide patient specific drug information (verbally and/or in writing) to nurses, physicians, peers and pharmacy preceptors.
9. Counsel all assigned patients about their drugs.

## **B. Other Activities**

1. Participate in department of pharmacy educational activities or other educational activities as assigned by preceptors.
2. For Community and Hospital Pharmacy rotations, students should refer to CAPE Appendix, Domain II.
3. Written reports/ In-service/DUE/Drug Information Questions
  - a. Each student is required to prepare at least one written assignment per rotation that will be requested by the preceptor. Assignments can include any of the following: drug monograph, a review article, drug information question, pharmacy newsletter, DUE, or an in-service to the medical or nursing team. The assignment(s) must be adequately referenced. When asked drug information questions by members of the healthcare team students must check their references thoroughly prior to answering such questions and consult with the supervising faculty.
  - b. Often, formal written responses may be required. The prepared answer should restate the question, establish an answer and support the answer with appropriate references. Researching an answer will help students understand the issue and familiarize them with the various available references.
  - c. All assignments must be submitted to the preceptor on due date. Any delays will cause a 5% deduction from the total assignment grade.
4. Interventions
  - a. Students must document their interventions on the intervention sheets provided.
  - b. Students need to note the patient's case # and initials for further inquiries.
  - c. Interventions should be submitted to preceptors regularly and be part of students' daily activities.
5. Presentations
  - a. Formal Oral Presentations: For each required rotation, students should present one formal oral presentation on a topic assigned by the preceptor unless otherwise specified. Preceptors will assign presentation date The presentation duration is in 30-35 minutes. Audiovisual (AV) has to be used appropriately. Students should be prepared at least 2 days before presentation date (AV, slides, handouts). All presentation should be accompanied with a comprehensive handout.
  - b. Journal Club: For each elective rotation, students must present a journal club on a recent primary literature publication assigned by the preceptor or chosen by the student upon preceptor request. Preceptor will assign date of the Journal Club. Student should present in 25 - 30 minutes the relevance of this paper in current practice. It is the student's duty to make copies available to fellow students/preceptors 2 days to the Journal Club.



## Section V: Description of Requirements and Grading

### A. PHA 670: Ambulatory Care – Required Rotation in the U.S.

Students must follow the drug therapy and progress of at least one patient per day using the SOAP format. Students must monitor the drug therapy and progress of at least two patients per day. Patients may be selected by the students or assigned by the preceptor.

Professionalism	10%
Clinical Skills	40%
Knowledge	30%
Communication	<u>20%</u>
	100%

*Please review the corresponding evaluation form for more details on the grading of the individual expected competencies*

### B. PHA 671: Community Pharmacy – Required Rotation in the U.S.

Students are required to participate in daily operation of pharmacy and provide direct care to patients under the direct supervision of the preceptor. Students must monitor and follow up patients on service or as instructed by the preceptor. Students must counsel at least two patients per day about drug therapy management and other related diseases information, under the direct supervision of adjunct faculty. A workbook of activities must be fulfilled by the end of rotation to document the completion of the learning outcomes detailed in the syllabus of this rotation.

Professionalism	10 %
Clinical Skills	20%
Knowledge	10%
Communication	<u>50%</u>
	100%

*Please review the corresponding evaluation form for more details on the grading of the individual expected competencies.*

### C. PHA 672: Hospital or Health-System Pharmacy – Required Rotation in the U.S.

Students must engage with various pharmacy personnel to learn all aspects of institutional pharmacy practice.

Students must prepare a medication use evaluation, submit a drug monograph, research at least four drug information questions (one/week), and prepare a medication safety report on a topic assigned by the preceptor.

The oral presentation must address a Health-System related topic assigned by the preceptor.

Professionalism	10 %
Clinical Skills	50%
Knowledge	20%
Communication	<u>20%</u>
	100%

*Please review the corresponding evaluation forms for more details on the grading of the individual expected competencies*

**D. PHA 673: Inpatient/Acute Care General Medicine – Required Rotation in the U.S.**

Students must follow the drug therapy and progress of at least three patients per week using the SOAP format. Students must monitor and follow up patients and their treatments on service or as instructed by the preceptor (with a minimum of 7 active patients monitored per day). Patients may be selected by the students or assigned by the preceptor. In the Critical Care settings, students must follow the drug therapy and progress of two patients per week using the SOAP format.

Professionalism	10%
Clinical Skills	50%
Knowledge	30%
Communication	<u>10%</u>
	100%

**Note:** Extra assignments will be counted as part of the case discussion grade

*Please review the corresponding evaluation forms for more details on the grading of the individual expected competencies*

**E. PHA 650: Inpatient/Acute Care – Elective Rotations in Lebanon**

Students must follow the drug therapy and progress of at least three patients per week using the SOAP format. Students must monitor and follow up patients and their treatments on assigned service or as instructed by the preceptor (with a minimum of 7 active patients monitored per day). Patients may be selected by the students or assigned by the preceptor. In the Critical Care settings, students must follow the drug therapy and progress of two patients per week using the SOAP format.

Pharmacy rounds	65%
Patient Cases	(45%)
Service patient F/U	(20%)
Communication	25%
Professionalism	<u>10%</u>
	100%

**Note:** Extra assignments will be counted as part of the case discussion grade

**F. PHA 650A: Academic Teaching – Elective Rotation in Lebanon**

Students must co-precept third professional year pharmacy students during an inpatient/outpatient rotation and provide other educational services as detailed in the syllabus of the rotation.

Precepting Skills	50 %
Discussion	(30 %)
Monitoring	(20 %)

Syllabus development	5 %
CE Lecture	15 %
Small Group Discussion	10 %
Journal Club Presentation	10 %
Preceptor Evaluation	<u>10 %</u>
	100 %

### G. PHA 650G: Industrial Pharmacy – Elective Rotation in Lebanon

Students must rotate in the five major departments of a pharmaceutical industry and prepare of Power-Point/lecture presentations assigned by the respective person from each department. The production area and the Quality Control Laboratory are an integral part of the rotation where students will get the chance to practice what they have acquired.

Oral assessment by adjunct faculty (based on tasks) – (5% per department)	30%
Assignment per department by adjunct faculty – Assignment Evaluation Sheet	35%
Presentation of an original research paper relevant to the field	25%
○ Paper or Subject are chosen by the LAU coordinator / adjunct faculty	
○ Presentation time from 20 to a maximum of 30 minutes	
Adjunct faculty / preceptor evaluation	<u>10%</u>
	100%

### H. PHA 650Q: Regulatory Affairs – Elective Rotation in Lebanon

The Pharmacy Regulatory Affairs rotation is designed to provide pharmacy students with a well-rounded exposure to and grasp of the governmental and legislative rules and regulations that govern medication registration, pricing, inspection processes of pharmaceutical establishments, controlled substances, pharmacy licensure of pharmaceutical establishments and pharmacists and free distribution of medications to patients. The clerkship consists of a calendar month and focuses on the basic principles of medication approval process, import/export of medicines and medical products, registration, inspection of pharmaceutical establishments and management of all relevant pharmaceutical issues as well as direct patient care activities.

Oral assessment based on tasks performed (checklist per department)	10 %
Assignment per Department	
Assignment 1	10%
Assignment 2	10%
Assignment 3	15%
Assignment 4	15%
Assignment 5	10%
Assignment 6	10%
Assignment 7	10%
Adjunct Preceptor Evaluation	<u>10%</u>
	100%

## Section VI: Evaluation Procedure

1. For each rotation, the preceptor selects all assignments, evaluates student performance and assigns rotation grades.
2. At the end of the 2<sup>nd</sup> week of rotation, the preceptor will submit a midpoint student evaluation.
3. At the end of the 4<sup>th</sup> week of rotation, the preceptor will submit a final student evaluation.
4. Feedback and evaluations must be provided to students in privacy without the presence of the students, healthcare professionals, or guests.
5. At the end of each rotation, the student will fill an electronic evaluation form to provide **constructive** feedback to the preceptor and site about the clerkship experience. The feedback form must be completed BEFORE accessing (online) final grades. The information provided in the student feedback form will be distributed to preceptors and site coordinators at the conclusion of the clerkship year.
6. Students are required to submit a self-evaluation at the beginning of the academic year, a midpoint self-evaluation at the end of the fall semester, and a final self-evaluation at the end of the academic year.

## Section VII: Grading Scale

*The LAU Grading Scale is followed for all required and elective APPEs.*

Grade	Quality Points	Guidelines over 100
A	4	≥ 90
A-	3.67	87-89
B+	3.33	83-86
B	3.0	80-82
B-	2.67	77-79
C+	2.33	73-76
C	2	70-72
C-	1.67	67-69
D+	1.33	63-66
D	1	60-62
F	0	≤ 59

## Section VIII: Compensation for Students

Students are not compensated financially for experience training, but receive academic credit plus intern hour credit for each training period.

## Section IX: Plagiarism

Plagiarism on assignments and project work is a *serious offense*. If plagiarism is detected, a student will get an "F" in the rotation.

## Section X: Dealing with Problems or Dispute

### A. Dispute with Preceptors

If a problem or dispute arises in connection with preceptor actions in a rotation, students should take the following actions in the following order:

1. Contact the preceptor and attempt to resolve the issue directly.
2. If your complaint is not resolved, contact the site coordinator in case you are completing a required rotation in the United States.
3. If your complaint is not resolved, contact the U.S. site coordinator in case you are completing a required rotation in the United States.
4. If your complaint is not resolved, contact the Director of Experiential Education.
5. If your complaint is still not resolved, you may contact the Chair of the Pharmacy Practice Department.
6. If your complaint is still not resolved, you may contact the Assistant Dean for Student Affairs
7. If your complaint is still not resolved, you may contact the Dean of the College of Pharmacy.
8. If your complaint is still not resolved, you may grieve to the School Grievance Council.

### B. Dispute with Hospital Staff/Student

If a problem or dispute arises in connection with any of the hospital staff or students, contact your preceptor as soon as possible.

## Section XI: Other Issues

### A. Contacting Preceptors

Students must discuss with the preceptor the best method of contact (pagers, emails, mobile phones, and extensions...). Students are not allowed to communicate with preceptors via cell phone text messaging.

### B. Use of Mobile Phones

During meetings with preceptors, rounds, conferences, and other educational activities, cellular phones must be turned off.

## Section XII: Preceptors of the Advanced Pharmacy Practice Experiences

### A. Preceptors for the Elective APPEs in Lebanon

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Nibal Chamoun, Pharm.D., BCPS	Office	Byblos campus: Dorms A 715
	Extension	2407
	Email	<a href="mailto:nibal.chamoun@lau.edu.lb">nibal.chamoun@lau.edu.lb</a>
Mazen Jabre, Pharm.D., BCPP	Office	Notre Dame De Secours Hospital
	Extension	2315
	Email	<a href="mailto:mazen.jabre@lau.edu.lb">mazen.jabre@lau.edu.lb</a>

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Wissam Kabbara, Pharm.D., BCPS	Office	Byblos campus: Dorms A 716
	Extension	2427
	Email	<a href="mailto:wissam.kabbara@lau.edu.lb">wissam.kabbara@lau.edu.lb</a>
Lamis Karaoui, Pharm.D., BCPS	Office	Byblos campus: Dorms A 719
	Extension	2318
	Email	<a href="mailto:lamis.karaoui@lau.edu.lb">lamis.karaoui@lau.edu.lb</a>
Ghada El Khoury, Pharm.D., BCACP	Office	Byblos campus: Dorms A 713
	Extension	2432
	Email	<a href="mailto:ghada.khoury@lau.edu.lb">ghada.khoury@lau.edu.lb</a>
Hanine Mansour, Pharm.D., BCPS	Office	Byblos campus: Dorms A
	Extension	TBD
	Email	<a href="#">TBD</a>
Wijdan Ramadan, Pharm.D.	Office	Byblos campus: Dorms A 720
	Extension	2267
	Email	<a href="mailto:wramadan@lau.edu.lb">wramadan@lau.edu.lb</a>
Aline Saad, Pharm.D.	Office	Byblos campus: Dorms A 714
	Extension	2311
	Email	<a href="mailto:aline.saad@lau.edu.lb">aline.saad@lau.edu.lb</a>
Marwan Sheikh-Taha, Pharm.D., BCPS (AQ-Cardiology)	Office	Byblos campus: Dorms A 719
	Extension	2108/1823
	Email	<a href="mailto:marwan.taha@lau.edu.lb">marwan.taha@lau.edu.lb</a>
Rony Zeenny, Pharm.D., BCPS	Office	Byblos campus: Dorms A 715
	Extension	2864
	Email	<a href="mailto:rony.zeenny@lau.edu.lb">rony.zeenny@lau.edu.lb</a>
Abeer Zeitoun, Pharm.D.	Office	Byblos campus: Dorms A 720
	Extension	2419
	Email	<a href="mailto:abeer.zeitoun@lau.edu.lb">abeer.zeitoun@lau.edu.lb</a>

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**Preceptors at the Ministry of Public Health, Lebanon**

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Rasha Hamra, Pharm.D.\*

Hiam Yaacoub

Lina Abou Mrad

Mostafa El Nakib

Colette Reaidy

Rima Firzli

Antoine Harb

Najib Bou-Orm

Maha Naous

Marie-Therese Matar

Mayssaloune Kanso

Rita Karam

Walid Ammar, M.D. Ph.D.

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**Preceptors at Benta Pharmaceutical Industry, Lebanon**

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Marinella Der Arakelian\*, B.S Pharmacy

Danie Moubarak, Pharm.D.

Reine Chrabieh, B.S., M.S

Myriam Kanaan, Pharm.D., MS, MIS

Carmen Mansour, Engineering Diploma

Carlo Razzouk, B.S., M.S., Ph.D.

Bertha Abou Zeid, Pharm.D.

Rama Krishna, B.S.

Marguerite Rizkallah, B.S, M.S.

Jimmy Tabet, TS3

Moussa Moussa, B.S. Pharm

Kristel Matar, B.S., M.S.

Samar Bou Jaoudeh, B.S.

Elie Bacha, BBA

Joelle El Hindi, B.S., M.S.

Bassam Jarjouhi, B.S.Pharm, Pharm.D., M.S., MBA

Fidele Obeid, B.S., M.S.

Juliana Jabbour, Pharm.D.

Salma Assi, BBA

Daniel Boulos, Business Management Certificate

Marise Salloum, B.S., M.S., Ph.D.

Patricia Kahwaji, B.S. Pharm., M.S. Pharm.

Sylvana Ghanem, B.S., M.S.

Pascale Fares, Pharm.D.

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*\*Site Coordinator*

## B. Preceptors for the Required APPEs in the United States

### 1. Houston Methodist Hospital, Houston, TX

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May Achi, Pharm.D., BCPS	Office	Houston Methodist
	Telephone	713-441-2783
	Email	<a href="mailto:machi@tmhs.org">machi@tmhs.org</a>

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## Appendix I. Ability-Based Outcomes (ABOs) Appendix for All Advanced Pharmacy Practice Experiences

### Domain I: Patient Care: Ensuring Appropriate Therapy Outcomes

- A. Gather and organize accurate and comprehensive patient information to identify ongoing or potential drug therapy problems.
  - 1. Obtain necessary information from the patient, caregiver, and/or other members of the health care team.
  - 2. Identify relevant information in the patient profile or medical record.
  - 3. Interview the patient or caregiver employing effective communication strategies.
  - 4. Identify the patient's primary complaint(s) and reason(s) for seeking medical care.
  - 5. Perform selected aspects of physical assessment, as appropriate.
  - 6. Protect the confidentiality of patient information.
  
- B. Interpret and evaluate patient and drug-related data needed to identify actual or potential drug therapy problems (prescription and non-prescription).
  - 1. Evaluate information obtained from the patient's history and physical assessment
  - 2. Assess any patient history of allergies and intolerances.
  - 3. Evaluate laboratory test results and pharmacokinetic data.
  - 4. Perform any additional patient calculations needed (e.g. creatinine clearance, ideal body weight, body surface area, body mass index).
  - 5. Identify the cause and significance of adverse drug effects.
  - 6. Evaluate the significance of actual or potential drug interactions.
  - 7. Assure that there is not excessive medication use or unnecessary drug duplication.
  - 8. Determine the extent to which medical conditions or diseases are treated or controlled.
  - 9. Assess patient adherence to previously prescribed medication regimens.
  - 10. Identify signs or potential indicators of drug misuse or abuse.
  
- C. Develop a complete medical and drug therapy problem list.
  - 1. Use relative priority to direct the pharmacotherapeutic plan.
  - 2. Differentiate active from inactive problems.
  - 3. Rank patient problems based on urgency and severity.
  - 4. Identify any preventative and health maintenance issues.
  
- D. Retrieve, analyze, and interpret the professional, lay, and scientific literature to make informed, rational, and evidence-based decisions.
  - 1. Construct well-built questions based on the patient's drug therapy problem(s) or needed information.
  - 2. Identify the types and quality of information that are available in primary, secondary, and tertiary information sources, including web-based resources and those intended for lay audiences.
  - 3. Employ effective and efficient search strategies to find appropriate sources of drug and health information using a variety of information resources.
  - 4. Effectively and efficiently search secondary sources such as Medline to locate pertinent primary literature.
  - 5. Critically analyze all relevant literature, considering its applicability and validity to the information needed.
  - 6. Critically analyze primary literature with regard to study design, methodology, findings, and con-

- clusions.
7. Integrate evidence from the literature with clinical expertise and consideration of patient preferences to draw a conclusion.
  8. Provide drug information clearly, accurately, concisely, and in a timely manner in a language appropriate for the target audience.
  9. Properly cite reference sources utilized.
- E. Select and recommend appropriate drug (prescription and non-prescription) and non-drug therapy as part of the care plan
1. Identify pharmacotherapeutic goals and endpoints of therapy.
  2. Apply principles of biochemistry, medicinal chemistry, pharmacology, and pathophysiology to select the appropriate drug(s).
  3. Consider social, economic, and cultural factors that influence a patient's perspective on health, illness, and medication use.
  4. Apply pharmacokinetic and pharmacodynamic principles to select the appropriate dose, dosage schedule, and drug delivery system.
  5. Determine the appropriate therapy duration.
  6. Apply pharmacoeconomic principles in drug selection.
  7. Identify and minimize or avoid drug interactions, adverse effects, and contraindications associated with the recommended drug therapy.
  8. Assure that there is not excessive medication use or unnecessary drug duplication.
  9. Recommend complementary therapies as appropriate to enhance therapeutic outcomes.
  10. Apply principles of nutrition to improve health, augment drug therapy, and reduce disease risk.
  11. Recommend medical goods and devices that are appropriate based on the patient's needs.
- F. Devise and implement a patient monitoring plan to ensure achievement of desired therapeutic outcomes.
1. Monitor patient-specific subjective and objective parameters for drug efficacy and toxicity.
  2. Assess appropriate parameters in a timely manner and at appropriate intervals/frequencies.
  3. Determine whether patient-specific goals have been met and adjust the care plan accordingly.
  4. Anticipate, monitor for, and report adverse effects and drug interactions.
  5. Refer patients to other health care professionals when indicated.

## **Domain II: Prepare and Dispense Medications and Devices**

- A. Review and interpret prescription orders for patients.
1. Evaluate the acceptability of prescription order transmission and legitimacy of source.
  2. Determine the validity of the patient-prescriber relationship.
  3. Clarify, add, and/or correct prescription order information when necessary.
- B. Accurately prepare and dispense medications and/or supervise the preparation of medications.
1. Correctly count, measure, mix, reconstitute, and calculate the quantity of medications to dispense.
  2. Correctly prepare the label for the finished prescription.
  3. Select an appropriate container based on the chemical and physical properties of the drug that meets the patient's characteristics or needs.

- C. Accurately compound individual or bulk medications.
  - 1. Locate accurate information on extemporaneous formulations.
  - 2. Evaluate the suitability of an extemporaneously compounded formulation.
  - 3. Calculate the correct quantity of ingredients.
  - 4. Use correct gravimetric and volumetric measuring procedures to obtain the desired quantity of the formulation component.
  - 5. Use good compounding practices in the extemporaneous production of a patient-specific drug delivery system.
  - 6. Identify physical and chemical incompatibilities among components of a given formulation and recommend appropriate alternatives to avoid incompatibilities.
  
- D. Prepare, store, and assure quality of sterile dosage forms.
  - 1. Calculate the correct quantity of components when preparing a sterile product.
  - 2. Use proper aseptic techniques to prepare sterile dosage forms.
  - 3. Use sterilization methods that are appropriate for the pharmaceutical product.
  - 4. Calculate the rate of drug administration based on the prescription order and the type of infusion pump used.
  - 5. Determine a patient's fluid, electrolyte and nutritional needs and calculate the amount and composition of parenteral nutrition sources to meet those needs.
  - 6. Perform proper quality control procedures.
  - 7. Evaluate the stability and compatibility of sterile formulations.
  
- E. Comply with federal, state, and local statutes and regulations that affect pharmacy practice.
  
- F. Resolve ethical and moral decisions faced by pharmacists.

### **Domain III: Health Promotion and Disease Prevention**

- A. Assess the health needs of a specific patient population by analyzing epidemiologic data and identifying risk factors that would adversely affect patient health.
- B. Develop appropriate criteria and outcome indicators and conduct medication reviews in specific populations.
- C. Evaluate pharmaco-economic data relevant to appropriate disease-specific treatment plans.
- D. Design evidence-based disease management programs that incorporate outcome indicators, drug treatment protocols, risk reduction strategies, and education programs for health care providers and patients.
- E. Assure that all relevant members of a patient population receive needed services.

### **Domain IV: Professionalism and Collaboration with the Health Care Team**

- A. Communicate clearly, accurately, compassionately, confidently, and persuasively with patients, caregivers, other health care professionals, and the public using appropriate listening, verbal, non-verbal, and written communication skills.
- B. Exhibit a caring and respectful attitude and demonstrate empathy while establishing rapport and communicating with the patient and/or caregiver.
- C. Establish collaborative relationships with other healthcare professionals that foster a team approach to patient care.
- D. Demonstrate professionalism and leadership within professional and civic organizations.



- E. Effectively communicate drug and health information at appropriate levels for patients and healthcare professionals.
- F. Demonstrate sensitivity and tolerance within multicultural interactions and settings.
- G. Educate patients and/or caregivers about drug therapy.
  1. Explain to patients or caregivers the drug, dosage, indication, and storage requirements for a given drug.
  2. Educate patients or caregivers on the symptomatology, significance, frequency, and management of adverse drug reactions.
  3. Explain any action that should be taken in the event of a missed dose.
  4. Demonstrate proper administration technique for a given drug delivery system and, as appropriate, confirm the patient's ability to perform such techniques.
  5. Facilitate patients assuming an active role in their self-care and overall health.
  6. Choose communication methods that are sensitive to the social and cultural background of the target audience.
  7. Confirm patient understanding of counseling provided and clarify if needed.
  8. H. Educate patients or caregivers about the proper use of medical goods and devices.
  9. Identify print, audiovisual, and/or computerized sources of patient education information on medical devices and goods that meet the patient's needs.
  10. Demonstrate and verify the proper use of medical goods and devices to ensure effective use.
  11. Communicate storage, calibration, and maintenance information for medical goods and devices.
- H. Document pharmaceutical care activity in a patient profile or medical record to facilitate communication and collaboration among healthcare providers.

#### **Domain V: Self-Directed Learning**

- A. Identify and analyze emerging issues, products, and services that may impact patient-specific and population-based pharmaceutical care.
- B. Assess one's own knowledge and abilities independently.
- C. Set personal knowledge and ability goals and take responsibility for attaining them.
- D. Recognize self-limitations and seek appropriate assistance/clarification.
- E. Review topics relevant to patient care activities to enhance knowledge base and preparedness.
- F. Accept feedback and implement suggestions for improvement.
- G. Manage time appropriately and efficiently.
- H. Exhibit intellectual curiosity and personal commitment to ensure ongoing professional competency.

## Appendix II. Useful Websites

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<b>Cardiology</b>	
American College of Cardiology	<a href="http://acc.org">http://acc.org</a>
American College of Cardiology/American Heart Association	<a href="http://www.accaha.org">www.accaha.org</a>
American Heart Association	<a href="http://www.americanheart.org">www.americanheart.org</a>
Chest Journal	<a href="http://www.chestjournal.org">www.chestjournal.org</a>
European Heart Journal	<a href="http://www.eurheartj.oxfordjournals.org">www.eurheartj.oxfordjournals.org</a>
European Society of Cardiology	<a href="http://www.escardio.org">www.escardio.org</a>
The Heart	<a href="http://www.theheart.org">www.theheart.org</a>

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<b>Critical Care (ICU)</b>	
Critical Care Medicine	<a href="http://journals.lww.com/ccmjournal/pages/default.aspx">http://journals.lww.com/ccmjournal/pages/default.aspx</a>
Critical Care/ The Clinics	<a href="http://www.criticalcare.theclinics.com">www.criticalcare.theclinics.com</a>
Journal of Critical Care	<a href="http://www.jccjournal.org">www.jccjournal.org</a>
Society of Critical Care Medicine	<a href="http://www.sccm.org">www.sccm.org</a>

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<b>Emergency Medicine</b>	
American Academy of Emergency Medicine	<a href="http://www.aaem.org/jem">www.aaem.org/jem</a>
Annals of Emergency Medicine	<a href="http://www.annemergmed.com">www.annemergmed.com</a>
Biomed Central	<a href="http://www.biomedcentral.com/bmcmemergmed">www.biomedcentral.com/bmcmemergmed</a>
Canadian Journal of Emergency Medicine	<a href="http://www.cjem-online.ca">www.cjem-online.ca</a>
Clinical Pediatric Emergency Medicine	<a href="http://www.journals.elsevierhealth.com/periodicals/ycpem">www.journals.elsevierhealth.com/periodicals/ycpem</a>

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<b>Endocrinology</b>	
American Academy of Family Physicians	<a href="http://www.aafp.org">www.aafp.org</a>
American Association of Clinical Endocrinologists	<a href="http://www.aace.com">www.aace.com</a>
Clinical Endocrinology	<a href="http://www.wiley.com/bw/journal.asp?ref=0300-0664&amp;site=1">www.wiley.com/bw/journal.asp?ref=0300-0664&amp;site=1</a>
Journal of Diabetes Care	<a href="http://care.diabetesjournals.org">http://care.diabetesjournals.org</a>
Journal of Endocrinology And Metabolism	<a href="http://jcem.endojournals.org">http://jcem.endojournals.org</a>

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<b>Guidelines</b>	
National Guideline Clearinghouse	<a href="http://www.guidelines.gov">www.guidelines.gov</a>

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<b>Infectious Diseases</b>	
Antimicrobial Agents And Chemotherapy	<a href="http://aac.asm.org">http://aac.asm.org</a>
Central For Disease Control And Prevention	<a href="http://www.cdc.gov">www.cdc.gov</a>
Infectious Disease Society of America	<a href="http://www.idsociety.org">www.idsociety.org</a>
Infectious Diseases	<a href="http://www.id.theclinics.com">www.id.theclinics.com</a>
International Society For Infectious Diseases	<a href="http://www.isid.org">www.isid.org</a>
The Lancet Infectious Diseases	<a href="http://www.thelancet.com/journals/laninf/issue/current">www.thelancet.com/journals/laninf/issue/current</a>
World Health Organization	<a href="http://www.who.int">www.who.int</a>

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<b>Internal Medicine</b>	
Annals of Internal Medicine	<a href="http://www.annals.org">www.annals.org</a>
Archives of Internal Medicine	<a href="http://archinte.ama-assn.org">http://archinte.ama-assn.org</a>
British Medical Journal	<a href="http://www.bmj.org">www.bmj.org</a>
Journal of The American Medical Association	<a href="http://jama.ama-assn.org">http://jama.ama-assn.org</a>
New England Journal of Medicine	<a href="http://www.nejm.org">www.nejm.org</a>

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The Lancet [www.thelancet.com](http://www.thelancet.com)

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### Neurology

American Academy of Neurology (AAN) Practice Guidelines [www.aan.com/index.cfm?axon=redirect&&path=/go/practice/guidelines](http://www.aan.com/index.cfm?axon=redirect&&path=/go/practice/guidelines)  
American Psychiatric Society [www.psych.org/](http://www.psych.org/)  
Annals of Neurology <http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291531-8249>  
Archives of Neurology <http://archneur.ama-assn.org/>  
Clinical Neuropharmacology <http://journals.lww.com/clinicalneuropharm/pages/default.aspx>  
European Federation of Neurological Societies (EFNS) publications [www.efns.org/](http://www.efns.org/)  
Journal of Neurology Neurosurgery and Psychiatry <http://jnnp.bmj.com/>  
Lancet Neurology [www.thelancet.com/journals/lanneu/](http://www.thelancet.com/journals/lanneu/)  
Movement Disorder Virtual University [www.mdvu.org/](http://www.mdvu.org/)  
Movement Disorders [www.movementdisordersjournal.com/](http://www.movementdisordersjournal.com/)  
Nature Clinical Practice Neurology [www.nature.com/ncpneuro/](http://www.nature.com/ncpneuro/)  
Neurology [www.neurology.org/](http://www.neurology.org/)  
World Federation of Neurology publications [www.wfneurology.org/wfnseminars.htm](http://www.wfneurology.org/wfnseminars.htm)

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### Nephrology

American Journal of Kidney Disease [www.ajkd.org](http://www.ajkd.org)  
American Journal of Nephrology [www.karger.com/ajn](http://www.karger.com/ajn)  
ISN Nephrology Gateway [www.isn-online.org](http://www.isn-online.org)  
Journal of Nephrology [www.inephrol.com](http://www.inephrol.com)  
National Kidney Foundation [www.kidney.org](http://www.kidney.org)  
Nephrology at your Fingerprint [www.nephronline.org](http://www.nephronline.org)  
Nephrology Dialysis Transplantation [www.ndt.oxfordjournals.org](http://www.ndt.oxfordjournals.org)

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### Nutrition

American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) [nutritioncare.org](http://nutritioncare.org)  
American Society for Nutrition (ASN) [Nutrition.org](http://Nutrition.org)  
Journal for Parenteral and Enteral Nutrition (JPEN) <http://pen.sagepub.com/>  
Nutrition in Clinical Practice (NCP) <http://ncp.sagepub.com/>  
The American Journal of Clinical Nutrition <http://ajcn.nutrition.org/>

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### Obstetrics and Gynecology

Medscape OBGYN & Women's Health [www.medscape.com/womenshealth](http://www.medscape.com/womenshealth)  
Obstetrics & Gynecology <http://journals.lww.com/greenjournal/pages/default.aspx>  
Obstetrics and Gynecology [www.obgyn.net](http://www.obgyn.net)  
Educational tutorials [www.obgyn.net/educational-tutorials/educational-tutorials.asp?page=obstetrics-perinatology](http://www.obgyn.net/educational-tutorials/educational-tutorials.asp?page=obstetrics-perinatology)

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### Oncology

American Society of Clinical Oncology [www.asco.org](http://www.asco.org)  
Cancer Network [www.cancernetwork.com](http://www.cancernetwork.com)  
Hematology Oncology Pharmacy Association [www.hoparx.org](http://www.hoparx.org)  
HemOncToday [www.hemonctoday.com](http://www.hemonctoday.com)

International Society of Oncology Pharmacy Practitioners	<a href="http://www.isopp.org">www.isopp.org</a>
Journal Of Clinical Oncology	<a href="http://jco.ascopubs.org">http://jco.ascopubs.org</a>
Multinational Association Of Supportive Care In Cancer	<a href="http://www.mascc.org">www.mascc.org</a>
National Cancer Institute	<a href="http://www.cancer.gov">www.cancer.gov</a>
National Comprehensive Cancer Network	<a href="http://www.nccn.org">www.nccn.org</a>
Nuclear Control Institute	<a href="http://www.nci.org">www.nci.org</a>
The American Society of Hematology	<a href="http://www.hematology.org">www.hematology.org</a>
The Oncologist	<a href="http://theoncologist.alphamedpress.org">http://theoncologist.alphamedpress.org</a>

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### **Pediatrics**

American Academy Of Pediatrics	<a href="http://www.aap.org">www.aap.org</a>
European Journal of Pediatrics	<a href="http://www.springerlink.com/content/100415">www.springerlink.com/content/100415</a>
Journal of Paediatric and Child Health	<a href="http://www.wiley.com/bw/journal.asp?ref=1034-4810">www.wiley.com/bw/journal.asp?ref=1034-4810</a>
Journal Of Pediatrics	<a href="http://www.jpeds.com">www.jpeds.com</a>
Journal of the American Academy of Pediatrics	<a href="http://pediatrics.aappublications.org/">http://pediatrics.aappublications.org/</a>
Pediatric Infectious Disease Journal	<a href="http://journals.lww.com/pidj/pages/default.aspx">http://journals.lww.com/pidj/pages/default.aspx</a>
Pediatrics Critical Care Medicine	<a href="http://www.pedsccm.org">www.pedsccm.org</a>
Pediatrics In Review	<a href="http://pedsinreview.aappublications.org">http://pedsinreview.aappublications.org</a>
WHO Child Health	<a href="http://www.who.int/topics/child_health/en">www.who.int/topics/child_health/en</a>

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### **Pharmacy Journals**

ACCP Pharmacotherapy Journal	<a href="http://www.pharmacotherapy.org">www.pharmacotherapy.org</a>
American Journal Of Health-System Pharmacists	<a href="http://www.ajhp.org">www.ajhp.org</a>
Annals of Pharmacotherapy	<a href="http://www.theannals.com">www.theannals.com</a>
Drugs	<a href="http://adisonline.com/drugs/pages/default.aspx">http://adisonline.com/drugs/pages/default.aspx</a>

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### **Search Databases**

MdConsult	<a href="http://www.mdconsult.com">www.mdconsult.com</a>
Medscape	<a href="http://www.medscape.com">www.medscape.com</a>
Pubmed	<a href="http://www.pubmed.com">www.pubmed.com</a>