

University of Utah College of Pharmacy

ADVANCED PHARMACY PRACTICE  
EXPERIENCE MANUAL

For the

Doctor of Pharmacy Program



CLASS OF 2016

University of Utah  
College of Pharmacy

# Advanced Pharmacy Practice Experience Manual

## Class of 2016

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If any of the writings, lectures, films or presentations in these courses includes material that conflicts with the core beliefs of some students, accommodations may be made. Please review the syllabus carefully and discuss any potential concerns with the course master at your earliest convenience.

The University Of Utah College Of Pharmacy Professional Program is accredited by the American Council of Pharmaceutical Education, 311 West Superior Street, suite 512, Chicago, IL 60610, (312)664-3575, (800)533-3606.

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**ACADEMIC CALENDAR**  
**Summer 2015 – Spring 2016**

**Semester Information**

**Summer 2015**

May 18	Classes Begin
May 27	Last Day to Drop Classes
May 25	Memorial Day holiday
June 1	Tuition Due, Last Day to Register
June 26	Last Day to Withdraw from Classes
July 4	Independence Day holiday
July 24	Pioneer Day holiday
August 5	Classes End
August 6-7	Final Exam Period
August 18	Grades Available

**Clerkship Dates**

May 26 – July 3
July 6 – August 14
August 28 – September 26
September 28 – November 6
November 9 – December 18
January 4 – February 12
February 15 – March 25
March 28 – May 6

**Fall 2015**

August 24	Classes Begin
September 7	Labor Day holiday
September 2	Last Day to Drop Classes
September 8	Tuition Due, Last day to register
October 12-16	Fall Break
October 23	Last Day to Withdraw from Classes
November 26-27	Thanksgiving break
December 10	Classes End
December 14-18	Final Exam Period
December 29	Grades Available

**Spring 2016**

January 11	Classes Begin
January 18	Martin Luther King, Jr. Day
January 20	Last Day to Drop Classes
January 25	Tuition Due, Last Day to Register
February 15	Presidents' Day holiday
March 4	Last Day to Withdraw from classes
March 13-20	Spring Break
April 26	Classes End
April 30-May 4	Final Exam Period
May 6	Graduation
May 17	Grades Available

## **APhA CODE OF ETHICS FOR PHARMACISTS**

Pharmacists are health professionals who assist individuals in making the best use of medications. This Code, prepared and supported by pharmacists, is intended to publicly proclaim the principles that form the fundamental basis of the roles and responsibilities of pharmacists. These principles, based on moral obligations and virtues, are established to guide pharmacists in relationships with patients, health professions and society.

### **1. A Pharmacist Respects the Covenantal Relationship between the Patient and Pharmacist**

Considering the patient-pharmacist relationship as a covenant means that a pharmacist has moral obligations in response to the gift of trust received from society. In return for this gift, a pharmacist promises to help individuals achieve optimum benefit from their medications, to be committed to their welfare and to maintain their trust.

### **2. A Pharmacist Promotes the Good of Every Patient in a Caring, Compassionate and Confidential Manner**

A pharmacist places concern for the well-being of the patient at the center of professional practice. In doing so, a pharmacist considers needs by the patients as well as those defined by health science. A pharmacist is dedicated to protecting the dignity of a patient. With a caring attitude and a compassionate spirit, the pharmacist focuses on serving the patient in a private and confidential manner.

### **3. A Pharmacist Respects the Autonomy and Dignity of Each Patient**

The pharmacist promotes the right of self-determination and recognizes individual self-worth by encouraging patients to participate in decisions about their health. The pharmacist communicates with patients in understandable terms, as well as respects personal and cultural differences among patients.

### **4. A Pharmacist Acts with Honesty and Integrity in Professional Relationships**

A pharmacist has a duty to tell the truth and act with conviction of conscience. Pharmacists avoid discriminatory practices, behavior or work conditions that impair professional judgment and actions that compromise dedication to the best interests of the patient.

### **5. A Pharmacist Maintains Professional Competence**

A pharmacist has a duty to maintain knowledge and abilities as new medications, devices and technologies become available as health information advances.

### **6. A Pharmacist Respects the Values and Abilities of Colleagues and Other Health Professionals**

When appropriate, pharmacists ask for the consultation of colleagues or other health professionals or refer the patient. A pharmacist acknowledges that colleagues and other health professionals may differ in the beliefs and values they apply to the care of the patient.

Adopted October 27, 1994, by the American Pharmaceutical Association

## **GENERAL INFORMATION ABOUT ADVANCED PHARMACY PRACTICE EXPERIENCES**

### **Required Experiences**

The Professional Experience Program consists of two introductory practice experiences and seven advanced clinical practice experiences. The seven advanced practice experiences are scheduled throughout the student's last academic year. They are each six weeks in length and are graded with a letter grade. The following are required advanced experiences: Acute Care, Ambulatory Care, Advanced Community, Advanced Health Systems, and Clinical Information Services. Two additional practice experiences from any area serve as the electives. You can arrange for an independent study clerkship as an elective clerkship with prior approval from the PEP Director. Students are required to complete one rural experience during either the IPPE year or the APPE year.

### **Experiential Schedule/ Time Off**

There are 8 potential experiential blocks throughout the year with the year beginning and ending in May. You are permitted to schedule one of these six week blocks as an "off" time. The experiential schedule does not follow the University schedule. Students are not permitted to take off on traditional University holidays or breaks.

You are expected to follow the preceptor's schedule at all times to obtain the optimal learning experience. This may include attending the site on weekends, holidays or extended hours. The minimum number of total hours for an experience is 240 hours. Your practice experience may exceed that, depending on the preceptor and site's schedule.

Students planning to attend a professional meeting or schedule residency or career interviews during clerkships should notify the preceptor and the PEP Director of his/her intentions as soon as possible. You may take up to two days from the experience for these purposes, however you must expect to make up this missed time at the site at a time agreed upon with the preceptor. The time and type of assignment will be decided at the discretion of the preceptor and needs to coordinate with the preceptor's schedule and the Assistant Dean for Experiential Education.

Students who miss more than two days from the experience for any purpose are expected to make-up the time at the site. The make-up time will be coordinated with the preceptor's schedule and approved by the PEP Director.

Students planning on taking time for interviews (career/residency) that will require more than two days away from the experience will be given the choice of either the 6<sup>th</sup> block or the 7<sup>th</sup> block as their "off" block.

### **Registration**

The PharmD program is under the University's Graduate School and as such, students are permitted to register for a maximum of 18 credit hours per semester. There are no exceptions to this rule. **You must plan on registering and paying tuition for three APPEs summer semester.** Because the scheduling of the APPEs does not coincide with the University's calendar, you will receive an "I" or an incomplete for a grade during a semester. That grade will be changed as soon as the clerkship is completed and all clerkship requirements are complete. The "I" grades are not computed into your GPA. Students must follow these guidelines for course registration during their P4 year:

- Summer Semester 2015: 3 Clerkships
- Fall Semester 2015: 2 Clerkships (+seminar)
- Spring Semester 2016: 2 Clerkships (+seminar & IPE)

NOTE: Not all preceptors are faculty members. Clerkship courses that are taught by non-faculty preceptors are simply "assigned" a member of the faculty for academic/registration purposes.

### **Preceptor Evaluations**

Experiential and preceptor evaluations are very important to the success of the Professional Experiential Program. We rely on student's assessment of their learning experience and use the information to help train our preceptors. Experiential and preceptor evaluations are to be completed by the student within two weeks of completing the clerkship. These are completed anonymously online. A reminder will be emailed to you at least two weeks before the end of the clerkship. Students who do not complete the evaluation by the stated deadline will not have their grades posted, and instead will have an "I" posted. Failure to complete the evaluation on time may result in a grade decrease of ½.

### **Site Activity Planning**

This manual lists the professional experiences and their learning objectives. These learning objectives describe in general what activities *may* occur for the experience.

Sites may have more site specific learning activities that are shared with you at the beginning of the experience. Please plan to read over the general learning objectives prior to the start of the experience to become familiar with what will be expected of you. If the site has more site-specific learning objectives, you are expected to complete these learning activities as well.

**Plan to contact your preceptor at least two weeks prior to the start of the experience to help plan for the first day as well as discuss expectations of the experience.** Students may need to plan for:

- 1) Any introductory or review readings
- 2) Clerkship schedule
- 3) Expected professional dress

Preceptors may use any means of assessing the student's general knowledge base on clerkships. Practice experiences help to reinforce didactic learning and build clinical practice skills and knowledge. Be prepared to review a patient's chart and present a patient, review and assess medical literature, present an in-service,

present a seminar, present a case topic or take a quiz, to name a few methods that may be used by preceptors to determine the student's ability.

### **Student Self-Assessment of Skills and Clinical Knowledge**

To help you and your preceptor tailor your clerkship experience to your needs and desires, fill out the Initial Self-Assessment in RXpreceptor. This is to be discussed with the preceptor during the first week of each experience. It allows the preceptor to better plan the experience and provide tailored teaching opportunities. It allows for open communication with your preceptor about the APPE learning objectives, student expectations, site specific objectives, and your own objectives for the experience, and what learning activities will be done to meet these objectives. Preceptors are able to view the Student Self-Assessments in RXpreceptor.

**Student Activities Section:** At the end of the Initial Self-Assessment, there are comment boxes to write each of the activities that you will be doing during each week of your rotation. Each rotation is required to provide *at least* 240 hours of clinical practice. The weekly activities will explain how those hours are being fulfilled. The activities can be items like a discussion between you and your preceptor about certain drugs and their interactions with others, reading literature or case studies, counseling patients, etc.

**Learning Objectives:** Set learning objectives towards knowledge that you hope to gain during rotation. At least one of these objectives should be patient centered. For example, "To gain more experience with and knowledge about patient counseling."

**Activities Planned to Accomplish Learning Objectives:** These activities should be specific to and help you accomplish your learning objectives for your rotation.

\*Complete the Final Self-Assessment again at the end of the experience.

*(There is also a paper form of the Self-Assessments and the Student Activities Calendar on pages 80-84 of this manual. The paper form should only be used under extenuating and approved circumstances.)*

### **Academic Standards**

"Satisfactory progress" in the PharmD Program is defined as "maintaining a cumulative or semester University and Professional grade point average of 3.0 or higher, receiving no grades below **C+**, nor any grades of E, EU, NC, I or W in any professional core or elective course." The cumulative professional grade point average is based on the grades obtained from all attempts at professional and core and elective courses. Please see pages 10-14 for additional discussion on academic and professional standards.

### **BLS Certification**

Basic Cardiac Life Support (BLS) Certification is a requirement for participation in the clerkship program. BLS certification courses are offered at affiliated hospitals throughout the Salt Lake Valley. **Students must provide proof of a valid BLS Certification via RXpreceptor.** This certification must be completed prior to starting on



scheduled experiences. Students whose BLS expires while in the middle of the year will need to renew the certification as soon as possible. *The College of Pharmacy will offer BLS certification courses throughout the academic year.*

### **Immunizations**

All students must have completed the series of required immunizations prior to starting on their experiences. **Students must provide proof of required immunizations via RXpreceptor.** If you have not completed the required immunizations, you will not be permitted on any experience. Please contact the PEP Coordinator for questions about completion of your immunizations. \*Some sites may require an additional immunization or test before beginning a rotation at their site. *(See appendix B for site specific immunizations.)*

### **Intern License**

Students must hold a current and active Pharmacy Intern License during any clerkship. **Students must provide proof of their license via RXpreceptor.** Students who are doing out-of-state clerkships will need to check on that state's requirements for an intern license and obtain that state's license.

### **Annual HIPPA/ Safety Training**

HIPPA and other regulatory training needs to be updated annually. You will complete these trainings each year through Canvas.

### **Background Checks**

The background check done as part of the admission process into the College of Pharmacy will suffice for most sites. The results of this background check **MUST** be uploaded to your RXpreceptor account. Some sites will require an additional background check. *Refer to appendix B to see clerkship specific requirements regarding background checks.*

### **Site Specific Paperwork**

Many of the sites require additional specific paperwork and other information before the student starts at that site. You are responsible for reviewing appendix B and completing all necessary requirements for the specific sites. **All site-specific paperwork must be turned into the PEP office before starting the APPE.** Plan at least 6 weeks in advance of starting an experience to complete paperwork requirements. Failure to complete the requirements could potentially impact your ability to participate in or complete the clerkship.

### **Drug Screening**

Some sites require drug screens. The cost of the screening is covered by the student. *Refer to Appendix A to see if a site requires a drug screen.*

### **Health Insurance**

Students are responsible for providing their own health insurance.

## **Liability Insurance**

Students who are doing an APPE outside the state of Utah are required to purchase their own professional liability insurance. This can be done through several professional organizations. Once purchased, a copy of the policy must be given to the PEP Coordinator.

## **Workers' Compensation**

If you are injured while on site during one of your clerkship rotations, you are covered under the University's Workers' Compensation Insurance. You must fill out the *Employee 1<sup>st</sup> Report of Injury or Illness Form 122*, found on the University's website [www.hr.utah.edu](http://www.hr.utah.edu) under **Forms**. You must fax this form both to the Benefits Department at 801-585-7375 and to the PEP office 801-585-6599 **within 24 hours** of your incident.

If you need medical attention, it is highly recommended that you visit the University of Utah Redwood Clinic at 1525 W. 2100 S. (phone 801-213-9777) for diagnosis and treatment, because you won't have any out of pocket expense. You must tell them that this is a Workers' Compensation case and should provide the following for insurance billing information:

Workers' Compensation Fund  
392 E. 6400 South  
SLC, UT 84107  
801-446-comp

**Do not report injury to the site.** The experiential site is not responsible for Workers' Compensation.

If you are doing an experience out of state, you may be required to purchase your own Workers' Compensation insurance. The University of Utah's insurance will not cover you if you are at an out-of-state site.

## **Student Contact Information**

Please keep your contact information updated in RXpreceptor. There may be times when your preceptor needs to get a hold of you to make other meeting arrangements. It is only visible to preceptors who you have/will have on your schedule. It is not accessible by any other preceptors/faculty.

## **Housing and Fuel Reimbursement for Rural Sites**

Housing is available in some areas through the Area Health Education Center (AHEC). An application is required at least 6 weeks in advance. Apply here: <https://utah-ahec.org/application/cr/>.

If you don't need housing, but are seeking fuel reimbursement, the above application is required. You will be eligible for a maximum of \$150 travel stipend through AHEC, so long as you complete a quick exit survey with them at the end of your rotation. The stipend is based on mileage so receipts are not required.

The College of Pharmacy leases an apartment for the Santaquin and Payson sites. If you would like to rent this apartment during your APPE in this area, contact the PEP Office for more information.

Students are responsible for arranging their own housing in areas that AHEC and CoP does not have housing contracts with. Here are some websites that students have used in the past:

[www.flipkey.com](http://www.flipkey.com)

[www.homeaway.com](http://www.homeaway.com)

[www.vrbo.com](http://www.vrbo.com)

[www.tripping.com/UT](http://www.tripping.com/UT)

[www.airbnb.com](http://www.airbnb.com)

[www.ksl.com](http://www.ksl.com)

If AHEC's services are not used, students are eligible for reimbursement of housing expenses of up to \$1050.00 per rural APPE rotation. All receipts must be submitted to the PEP Office for reimbursement. Contact the PEP Office for more details.

### **ACADEMIC AND PROFESSIONAL STANDARDS**

The College of Pharmacy is dedicated to the education and development of students into pharmacists who employ critical thinking skills and evidenced based knowledge in caring for their patients. Pharmacy is a demanding profession in which practitioners are asked to place the interests of patients above their own. It requires commitment to a life of service, dedication to continuous learning and high ethical standards. The Advanced Pharmacy Practice Experiences in the Doctor of Pharmacy Program help students to strengthen their foundation of knowledge, attitudes, skills and behaviors that are necessary for the practice of pharmacy throughout their careers.

All College of Pharmacy faculty members and students have responsibilities in assuring that graduates of the Professional Program have acquired the necessary foundation to provide pharmaceutical care to patients throughout their professional careers. The College of Pharmacy has an obligation to provide each student with a fair opportunity to meet the high standards of scholarship and integrity associated with the Pharm.D. degree and the profession of pharmacy. As professional students' progress through their experiential curriculum, the faculty members of the College of Pharmacy are obligated to evaluate whether students are qualified to receive the degree of Doctor of Pharmacy. However, it is ultimately the responsibility of each student to meet performance standards. In seeking these academic credentials, with the understanding that satisfactory performance is a prerequisite to the receipt of that credential, students are consenting to frank evaluation by those charged with the responsibility of supervising performance in the experiential courses. Faculty members of the College of Pharmacy are qualified as professionals to observe and judge all aspects of a student's academic performance, including demonstrated knowledge, technical and interpersonal skills, attitudes and professional character, as well as the ability to master the required curriculum.

In order to receive a professional degree in pharmacy, students must:

1. *Meet the academic requirements of each core and elective course*
2. *Meet the academic requirements of the Doctor of Pharmacy Program and the Graduate School*
3. *Uphold the University of Utah's and College of Pharmacy's standards of academic honesty, including, but not limited to, refraining from cheating, plagiarizing, research misconduct, misrepresenting one's work and/or inappropriately collaborating*
4. *Uphold the professional and ethical standards of the profession of pharmacy as set forth in the American Pharmacists Association Code of Ethics for Pharmacists. (See page 5)*

Students must maintain satisfactory progress throughout their clerkships, as they would for didactic coursework. **Satisfactory progress in the PharmD Program is defined as maintaining a cumulative or semester University and Professional grade point average of 3.0 or higher, receiving no grades below C+, nor any grades of E, EU, NC, I or W in any professional core or elective course.** The cumulative professional grade point average is based on the grades obtained from all attempts at professional and core and elective courses.

Students who receive grades below a C+ for a clerkship may be required to repeat the clerkship. In this scenario, repeated clerkships will not be done at the same site. This will be determined on a case-by-case basis by the Scholastic Standards Committee.

### **PLAGIARISM**

**Plagiarism or failure to attribute** is a form of academic dishonesty. It is important for you to understand what it is to help prevent any difficulties. The following provides the resources for you.

Student Code, University of Utah (Direct quote):

**“Academic Misconduct”** includes, but is not limited to, cheating, misrepresenting one’s work, inappropriately collaborating, plagiarism, and fabrication or falsification of information as defined further below. It also includes the facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct. . . .

- a. Misrepresenting one’s work includes, but is not limited to, representing material prepared by another as one’s own work, or submitting the same work in more than one course without prior permission of both faculty members.
- b. “Plagiarism” means the intentional unacknowledged use or incorporation of any other person’s work in, or as a basis for, one’s own work offered for academic consideration or credit for public presentation. Plagiarism includes, but is not limited to, representing as one’s own, without attribution, any other individual’s words, phrasing, ideas, sequence of ideas, information or any other mode or content of expression.

In the College of Pharmacy, the following is used to provide additional guidance for courses and clerkship experiences.

**Plagiarism or failure to attribute** is a form of academic dishonesty. This is using anyone else's work as your own. This includes another student's, another author's, etc. Consequences for committing academic dishonesty can include: failing the assignment, failing the class, probation or dismissal from the College or University. In the College of Pharmacy, issues related to academic dishonesty are referred to the Scholastic Standards Committee in for further action.

While everyone has their own concept of plagiarism, the guide that will be used for class and clerkships is copying more than 7 consecutive words verbatim without quotations and referencing, or more than 2 sentences in an assignment that reflect the original author's phrasing, sentence structure and meaning rather than the student's own thoughts.

You can also commit academic dishonesty by helping someone else commit plagiarism. **Likewise, if you create an assignment for one class and present it for credit in a second course, this also falls under this standard unless you have the permission of both course masters to use the material in both places.** Please be careful. If you are unsure, ask questions of your course master/preceptor.

### **STANDARDS FOR PROFESSIONAL EXPERIENTIAL PRECEPTORS**

1. Preceptors will promote and practice principles of professionalism, ethical behavior and compassionate patient care.
2. Preceptors will comply with all federal and state regulations pertaining to the practice of pharmacy.
3. Preceptors will discuss in detail what is expected of a student in the way of appearance, attitude and method of practice, and ensure that both he/she (the faculty preceptor) and co-workers adhere to these requirements.
4. Preceptors will offer to communicate with the student as much as possible and be willing to discuss any aspect of professional practice that doesn't violate the responsibility to his/her employer or employees.
5. Preceptors are aware, at all times, that the role is not simply that of a co-worker, but also of a teacher, role-model or mentor, and thus will project a positive attitude toward the profession.
6. Preceptors will afford the student the mutual respect and patience needed for an optimal learning experience.
7. Competency of the student will be determined by reviewing the student's experience profile, observation and appropriate testing or questioning early in the professional experience.
8. Any criticism provided will be constructive and empathetic, and conveyed to the student privately. Criticism should be presented as a means of learning, not embarrassment.
9. Preceptors will only discuss issues with the student that are related to the practice of the profession and avoid discussion of personal matters not related to pharmacy.
10. Preceptors will obtain annual continuing education instruction about teaching and learning and become familiar with the policies and procedures of the experiential curriculum.

11. Preceptors will work with the student to ensure that optimal learning experiences are provided, will strive to stimulate the student's interest in all aspects of professional practice and that the student's goals and objectives are met at the site.
12. Preceptors will submit all evaluation forms and reports required by the program in a timely manner.
13. Preceptors will decide the best assignment to be used as the make-up for missed experiential time that is less than three days. Students who miss more than two days from the experience are expected to make that time up at the site. This will be coordinated with the PEP Director and the student, and will be dependent in the preceptor's schedule.

### **STANDARDS FOR PROFESSIONAL STUDENTS**

1. Students will exhibit a professional demeanor in manner, dress and adherence to professional standards (see APhA Code of Ethics) at all times. Adherence to the standards of dress and behavior specified by faculty preceptors is imperative and are generally the same as those required of all pharmacists in the practice area. Failure to adhere to professional standards may result in a failing grade for the experience and referral to the scholastic standards committee for unprofessional conduct.
2. Students will wear University of Utah College of Pharmacy student identification at all times while at experiential sites unless site specific names badges are required.
3. Students are obligated to respect any legal, professional or business confidences revealed during the practice experience and may be required to sign a site specific confidentiality agreement. Students will respect patient confidentiality at all times. Failure to follow this policy will result in a failing grade for the experience and referral to the scholastic standards committee for unprofessional conduct.
4. Students will keep in mind that the primary objective of the experience is learning. Learning is not a passive process, but requires active participation and commitment on the part of the student.
5. Students will recognize that the optimum learning experience requires mutual respect and courtesy between the faculty preceptor and the student and thus will communicate effectively and professionally at all times with all persons involved with professional training, including with patients/ patient's caregiver.
6. Students will not question the advice or directions of the faculty preceptor in the presence of others. Constructive criticism should be viewed as a means of learning and not embarrassment.
7. Students will not hesitate to admit that they do not know something or are uncertain about expectations and responsibilities. Students are expected to identify and research general pharmaceutical care issues prior to asking appropriate questions.
8. Students will not make professional decisions without checking with the faculty preceptor, particularly in filling prescriptions, or advising patients or health care team members about choice of pharmacotherapy.
9. Students will take the initiative in communicating with physicians and patients, but will not step beyond the realm of professional courtesy or common sense.
10. Students will be constantly alert to the laws and regulations which govern practice and seek clarification of any points which are not clear.
11. Students will master routine procedures as quickly as possible so that time can be devoted to facets of the practice that involve decision-making.
12. Students are responsible for adhering to the work schedule of the faculty preceptor. The clerkship schedule does not coincide with the University calendar in regard to holidays or college breaks (i.e., fall and

spring semester breaks); therefore students are not to expect to take time off from their experience at such times.

13. Students are required to notify the faculty preceptor as soon as possible of any required absences or tardiness (e.g., seminars, TA responsibilities). Absences for reasons other than required or emergency purposes are discouraged, and should be kept to a minimum during the experience so as not to impact the learning experience or jeopardize the final grade. Unexcused absences may result in a failing grade and referral to the scholastic standards committee for unprofessional conduct.

14. If any days are missed from the experience for any personal reason, students can be required to make-up the missed time. The time and type of assignments will be decided at the discretion of the preceptor and needs to be coordinated with the preceptor's schedule. All schedule changes need to be approved by the PEP Director.

15. Students will be punctual in meeting the experiential schedule, arriving ahead of the faculty preceptor whenever possible in order to observe procedures involved in commencing practice or changing shifts.

16. Students will not be permitted to accept or receive any form of remuneration for professional experiences performed for academic credit pertaining to this program.

17. Students planning to attend a professional meeting or schedule residency interviews during clerkships should notify the preceptor of his/her intentions as soon as possible. Students should expect to make up this missed time. The time and type of assignment will be decided at the discretion of the preceptor and needs to be coordinated with the preceptor's schedule. All schedule changes need to be approved by the PEP Director.

18. Students are not allowed to be on clerkship with a faculty preceptor to whom the student is related or who is or has been a co-worker or employer of that student. Exceptions may be made for advanced clinical clerkships on a case-by-case basis.

19. Students may be required to take examinations as part of their grade for the professional experience.

20. Students are responsible for submitting all required completed evaluation forms (i.e., dated and signed by faculty preceptor and/or student) to the PEP Coordinator. Faxing/ scanning originals is permitted. Students are advised to check with the PEP Coordinator 1-2 weeks after the completion of the clerkship to ensure that all paperwork has been received.

21. Students are responsible for checking their University email account emails at least three times a week. Only valid University email accounts are used for University business.

23. Students experiencing problems/conflicts during a clerkship should discuss his/her concerns with the faculty preceptor as soon as possible. If the concerns are not adequately addressed by the faculty preceptor, the student should then contact the PEP Director.

# **DOCTOR OF PHARMACY**

## **ADVANCED PHARMACY PRACTICE EXPERIENCE**

### **LEARNING OBJECTIVES**



**PROFESSIONAL LEARNING OUTCOMES**  
**Applicable to all Advanced Pharmacy Practice Experiences:**

**Curricular Goals**

- Prepare pharmacists in a research-intensive, academic health center to be exemplary professionals who enable progress in healthcare by incorporating biomedical research advances into practice, serve as medication experts, and who advocate for and defend the public health.
- To educate and train clinical-scientists and clinician-educators to be effective leaders in academic pharmacy.

**Student Learning Outcomes**

All of the required APPEs will have the student involved with direct patient care activities, and in settings that can offer it, a continuity of care practice. However, some elective APPEs are in unique health care settings that teach many of the learning objectives. In aggregate, all of the learning objectives are achieved through a variety of healthcare settings and experiences.

Graduates of the University of Utah Doctor of Pharmacy Program will be able to provide patient-centered and population-based care in a variety of practice settings. Upon conclusion of the professional program graduates will be able to:

1. Apply fundamental scientific, analytic and problem-solving skills to all areas of pharmacy practice
2. Communicate effectively both orally and written in a variety of settings
3. Work collaboratively on healthcare teams
4. Base patient care/practice decisions on sound science and best evidence
5. Apply medication safety and quality-improvement principles to pharmacy practice
6. Manage medication-use systems
7. Promote public health and wellness
8. Develop behaviors to practice in an ethical, culturally aware and professional manner
9. Demonstrate a commitment to continuous professional development

**Adult/Acute Medicine - PCTH 7403-7409**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Obtain a medication history from patients admitted to the medical team. This shall include: evaluating the patient's knowledge of the medications he/she is taking, collecting any allergy or adverse drug reaction information, inquiring about use of over-the-counter agents or herbal remedies, screening for drug-induced problems or drug interactions and assessing noncompliance.
2. Develop an appropriate assessment and plan from the information obtained in the medication history.
3. Demonstrate the ability to read a chart in order to effectively monitor drug therapy.
4. Develop a rational and complete treatment plan for all acute medical problems in assigned patients. This includes the ability to monitor drug therapy using a problem-based format which includes: a problem list, goals of therapy, treatment plan and appropriate monitoring parameters.
5. Demonstrate the ability to verbally give in-depth patient presentations including:
  - A. brief medical history
  - B. problem list
  - C. goals of therapy
  - D. treatment plan
  - E. monitoring parameters
  - F. epidemiology and pathophysiology of the disease
  - G. treatment of the disease
  - H. utilization of primary literature to support or refute the treatment plan
6. Identify problems concerning drug therapy including inappropriate choice of drug, of dosage form, of route of administration or of dosing schedule, duplication of drugs, drug interactions, contraindications and adverse drug reactions.
7. Demonstrate the ability to affect therapy outcomes by bringing to the medical team's attention:
  - A. the appropriateness of: choice of drug; choice of dose and dosage form; choice of schedule and route of administration
  - B. the necessity of all drugs prescribed
  - C. possible: side effects or adverse reactions; drug-drug interactions; drug-laboratory test interactions; drug-food interactions; contraindications or cautions
  - D. treatment or management of adverse reactions or drug interactions
  - E. alternative drug treatment or regimens
  - F. therapeutic controversies involving given drug regimens
8. Demonstrate the ability to properly counsel patients about the appropriate use of their prescription and non-prescription medications.
9. Demonstrate the ability to perform pharmacokinetics analysis on the drug regimens prescribed.
10. Demonstrate an advanced ability to verbally disseminate clinically significant drug information regarding drug therapy when requested to do so or when it is appropriate for better patient care.
11. Demonstrate an advanced degree of skill and proficiency in answering written drug information questions when requested.

**Clinical Information Services: Drug Information – PCTH 7410**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Identify, describe and use the steps to responding to a drug information request.
2. Compare, contrast, and effectively use the tertiary references available in the Drug Information Center.
3. Compare, contrast and effectively use the secondary references available in the Drug Information Center, Clinical Library, and Eccles Library. This includes -
  - A. Iowa Drug Information Service
  - B. Science Citation
  - C. International Pharmaceutical Abstracts
  - D. Index Medicus
  - E. Silver Platter and Medline
  - F. Current Contents
4. Compare and contrast online versus printed secondary sources.
5. Outline the Policy and Procedures for the Drug Information Service. Conduct rotational activities according to the Policy and Procedures.
6. Given a drug information request, demonstrate the ability to properly respond to the request by
  - A. obtaining accurate and complete background information
  - B. outlining a search strategy, including classifying the request
  - C. researching the request using appropriate references and collecting the necessary data
  - D. evaluating information
  - E. formulating the response
  - F. communicating the response
  - G. following up on the response
7. Identify discrepancies and controversies in information and develop a rational plan for dealing with the controversy.
8. Prepare a drug review for the Pharmacy and Therapeutics Committee.
9. Describe the purpose and function of the Pharmacy and Therapeutics Committee and the Formulary System.
10. Prepare at least 3 written drug information responses.
11. Prepare at least 1 article for one of the DIS newsletters.
12. Given an article from the primary literature -
  - A. describe the study in detail including the study design, patient selection criteria, methodology and statistical analysis
  - B. identify flaws in the study design and methodology
  - C. describe the strengths and weaknesses of the study
  - D. assess if the conclusions are appropriate based on the information presented in the study
  - E. assess the applicability of the study results to clinical practice or a specific drug information request or patient circumstance
13. Serve as a role model to undergraduate clerkship students in the DIC.
14. Respond appropriately to calls concerning -
  - A. drug product defect reporting
  - B. adverse drug reaction reporting
  - C. nonformulary drug requests
  - D. investigational drug studies

## Clinical Information Services: Management of Poisonings - PCTH 7411

### Learning Objectives

#### I. Goals

1. To familiarize students with the toxicity of common drugs, chemicals and household products; the management of poisonings with these substances; the prevention of poisoning; and the role of pharmacists as providers of poison information.
2. To gain necessary skills to provide poison prevention information, clinical toxicology consultation and poison prevention education to the public and health professionals.
3. To enhance literature retrieval, writing and other drug information skills.

#### II. Objectives

At the completion of this professional experience, the student should be able to:

1. Demonstrate effective written and verbal communication skills through various clerkship activities
2. Interpret and combine information from multiple sources into a concise written or verbal response
3. Compare, contrast and effectively use the tertiary references
4. Compare, contrast and effectively use at least 2 secondary references, such as:
  - A. Iowa Drug Information Service
  - B. Science Citation
  - C. International Pharmaceutical Abstracts
  - D. Pub Med
  - E. TOXNET Web search
5. Given an information request, demonstrate the ability to properly respond to the request by:
  - A. obtaining accurate and complete background information
  - B. researching the request using appropriate references and collecting the necessary data
  - C. evaluating information
  - D. formulating the response
  - E. communicating the response
  - F. following up on the response
6. Demonstrate an understanding of pharmacology, pharmacokinetics and therapeutics as applicable to the specific information requests and other clerkship activities
7. Identify discrepancies and controversies in information and develop a rational plan for dealing with the controversy
8. Given an article from the primary literature
  - A. describe the study in detail including the study design, patient selection criteria, methodology and statistical analysis
  - B. identify flaws in the study design and methodology
  - C. describe the strengths and weaknesses of the study
  - D. assess if the conclusions are appropriate based on the information presented in the study
  - E. Assess the applicability of the study results to clinical practice or a specific drug information request or patient circumstance.
9. Prepare a written project for professional audiences that involves identifying a topic, conducting a literature search, evaluating information, writing a formal paper in an appropriate biomedical style
10. Participate in outreach poison prevention effort.

**Clinical Information Services: Pregnancy Risk Line - PCTH 7412**  
**Learning Objectives**

**I. Goals**

1. To familiarize students with the issues surrounding the data on pregnancy and lactation exposures.
2. To improve student's communication skills, both verbal and written, to the lay public and health care professionals when discussing pregnancy and lactation exposures.
3. To enhance literature retrieval and other drug information skills.

**II. Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Better understand the environmental causes of congenital anomalies in humans and the complexities of human teratogenic risk assessment.
  - A. Students will read and discuss written materials introducing the principles of teratology.
  - B. Students will attend lectures on clinical teratology.
  - C. A reading list of suggested materials regarding epidemiology, biostatistics, methods for critiquing medical literature, etc. will be accessible to each student.
2. Understand the advantages and limitations of various resources available for accessing pertinent human medical literature.
  - A. On-line databases, e.g.,
    - i. Medline
    - ii. Reprotox
  - B. Reference books, e.g.,
    - i. Drugs in Pregnancy and Lactation
    - ii. Teratogen Update
    - iii. Chemically Induced Birth Defects
    - iv. Infectious Diseases of the Fetus and Newborn Infant
  - C. Pregnancy Risk Line files
  - D. Pregnancy Risk Line advisors, e.g.,
    - i. Maternal/Fetal Medicine
    - ii. Dysmorphology
    - iii. Pediatric Infectious Disease staff
    - iv. Radiology
    - v. Drug Information Center
    - vi. Poison Control Center
3. Demonstrate critical thinking when evaluating the medical literature regarding causes of malformations in humans.
4. Prepare and present a review of the human literature about a particular drug or class of drugs in pregnancy.
  - A. Upon completion of this presentation, students will receive comments from Risk Line staff, medical advisors and the preceptor.
  - B. A written copy of the review will be retained in the Pregnancy Risk Line files.
5. Utilize the Risk Line classification system to categorize the teratogenic risk of the drug reviewed.
6. Understand the difficulties of interpreting and disclosing teratology risk assessments to health care providers and the public.
  - A. Students will be asked at the end of their review to provide, in lay language, an assessment of risk.
  - B. Students will learn about misconceptions regarding drugs as causes of congenital anomalies.

**Psychiatry - PCTH 7500**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Describe the purpose of a mental status examination to a psychiatric patient.
2. Obtain information relevant to the drug history from the patient, family or responsible other.
3. Demonstrate the ability to function as a patient advocate.
4. Identify the characteristic symptoms of major psychoses and primary affective disorders.
5. Devise and justify appropriate recommendations for initiation and maintenance drug therapy for schizophrenia, unipolar depression, bipolar depression, and anxiety states, including consideration of pharmacokinetics, pharmacologic and pharmaceutic concepts.
6. Identify and utilize parameters for monitoring therapeutic efficacy and adverse effects of psychopharmacologic agents.
7. Provide drug information to the patient care team.
8. Demonstrate appropriate verbal intervention with team members in cases of potential or real drug related problems.
9. Describe the following drug-induced problems and their management:
  - A. tardive dyskinesia (antipsychotics)
  - B. Parkinsonism (antipsychotics)
  - C. toxic psychosis (antipsychotics)
  - D. cardiac abnormalities (tricyclics)
  - E. diabetes insipidus (lithium)
  - F. neuroleptic malignant syndrome (antipsychotics)
10. Identify and describe the medical disease states in which psychopharmacologic agents may exacerbate the disease state.

## Surgery - PCTH 7501 Learning Objectives

At the completion of this professional experience, the student should be able to:

1. Demonstrate the ability to interview patients with completeness to obtain a medication history using an acceptable format.
2. Identify the drugs that may cause intra- or post-operative complications and the appropriate plan to avoid these complications.
3. Demonstrate the ability to retrieve necessary medical information from the patient's medical record to assess the patient's drug therapy and progress of their disease.
4. Demonstrate the ability to monitor drug therapy using the problem-oriented flow sheets to include rationale, efficacy, therapeutic endpoints, drug interactions and adverse effects.
5. Describe the influence of the surgical process on the absorption, distribution, metabolism and elimination of drugs.
6. Demonstrate the ability to respond appropriately to any drug information request and to disseminate clinically useful drug information.
7. Develop a rational individualized treatment plan for assigned patients including:
  - A. drug selection
  - B. dose, route, schedule, dosage form
  - C. alternate treatment regimens
8. Demonstrate the ability to discuss drug therapy in the following areas of surgery:
  - A. peptic ulcer disease
  - B. coagulopathy
  - C. liver disease
  - D. renal disease
  - E. infectious diseases
  - F. pain management
9. Demonstrate the ability to communicate therapeutic treatment information to other health care professionals.
10. Demonstrate the ability to give patient presentations discussing the medical history, problem list, pathophysiology of the disease state, therapeutic interventions with monitoring parameters, and literature supporting the decision and position.
11. Demonstrate the ability to undertake self-learning and initiate clinical pharmacy activities.

## Cardiology - PCTH 7502 Learning Objectives

At the completion of this professional experience, the student should be able to:

1. Obtain a medication history from all patients admitted to the team and screen for drug interactions, drug-induced symptoms or diseases, noncompliance, drug misuse or abuse and allergies or hypersensitivity reactions.
2. Write such medication histories using an acceptable format.
3. Identify problems concerning drug therapy including inappropriate choice of drug, of dosage form, of route of administration or of dosing schedule, duplication of drugs, drug interactions, contraindications and adverse drug reactions.
4. Identify communication patterns that lead to problems and conflicts and demonstrate the ability to resolve these problems.
5. Demonstrate an ability to disseminate clinically significant drug information regarding drug therapy when requested to do so or when it is appropriate for better patient care.
6. Demonstrate the ability to read a chart to find information necessary for monitoring drug therapy and to correlate clinically significant data.
7. Demonstrate the ability to monitor drug therapy using problem-oriented flow sheets to include rationale, efficacy, therapeutic endpoints, drug interactions and real or potential adverse drug reactions.
8. Demonstrate the ability to counsel patients about the appropriate use of their drugs, both prescription and nonprescription, at home.
9. Demonstrate the ability to influence therapeutics by bringing to the attention of the team:
  - A. the appropriateness of:
    1. choice of drug
    2. choice of dose and dosage form
    3. choice of schedule and route of administration
  - B. the necessity of all drugs prescribed
  - C. possible
    1. side effects or adverse reactions
    2. drug-drug interactions
    3. drug-laboratory test interactions
    4. drug-food interactions
    5. contraindications or cautions
  - D. treatment or management of adverse reactions or drug interactions
  - E. alternative drug treatment or regimens
10. Demonstrate the ability to perform pharmacokinetics analysis of the drug therapy of all patients.



11. Demonstrate the ability to monitor for errors by physicians, nurses, and pharmacists in prescribing, administering and dispensing drugs and to resolve such problems.
12. Demonstrate a high degree of skill and proficiency in answering all drug information requests. This implies reasonable speed and completeness.
13. Demonstrate the ability to appropriately answer a drug information request with adequate documentation.
14. Be able to develop a rational and complete treatment plan including monitoring parameters for assigned patients with
  - A. hypertension
  - B. coagulopathy
  - C. heart failure
  - D. arrhythmias
  - E. ischemic heart disease
  - F. heart transplants
15. Demonstrate the ability to give in-depth patient presentations including
  - A. brief medical history
  - B. problem list including how problems are evaluated, and what parameters are being followed
  - C. pathophysiology of the disease state
  - D. drug history
  - E. therapeutics, including information used in monitoring therapy on the flow sheet
  - F. utilization of the drug literature to support or refute drug therapy
  - G. discharge counseling
16. Describe the inclusion and exclusion criteria generally used to identify cardiac transplant patients.
17. Discuss the immune system and how it is altered in transplant patients.
18. Describe the signs and symptoms associated with a rejection episode and its therapeutic management.
19. Describe the heart's conduction system and relate this to the genesis of arrhythmias.
20. Discuss the mechanisms of action, relevant pharmacokinetics parameters, clinical advantages and disadvantages of the following classes of drugs -
  - A. antiarrhythmic agents
  - B. inotropes
  - C. vasodilators
  - D. calcium channel blockers
  - E. beta blockers
  - F. immune modulators

**Critical Care Medicine - PCTH 7503**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Identify problems concerning drug therapy including inappropriate choice of drug, of dosage form, of route of administration or of dosing schedule, duplication of drugs, drug interactions, contraindications and adverse drug reactions.
2. Identify communication patterns that lead to problems and conflicts and demonstrate the ability to resolve these problems.
3. Demonstrate an ability to disseminate clinically significant drug information regarding drug therapy when requested to do so or when it is appropriate for better patient care.
4. Demonstrate the ability to read a chart to find information necessary for monitoring drug therapy and to correlate clinically significant data.
5. Demonstrate the ability to monitor drug therapy using problem-oriented flow sheets to include rationale, efficacy, therapeutic endpoints, drug interactions and real or potential adverse drug reactions.
6. Demonstrate the ability to influence therapeutics by bringing to the attention of the team:
  - A. the appropriateness of
    1. choice of drug
    2. choice of dose and dosage form
    3. choice of schedule and route of administration
  - B. the necessity of all drugs prescribed
  - C. possible
    1. side effects or adverse reactions
    2. drug-drug interactions
    3. drug-laboratory test interactions
    4. drug-food interactions
    5. contraindications or cautions
  - D. treatment or management of adverse reactions or drug interactions
  - E. alternative drug treatment or regimens
7. Demonstrate the ability to perform pharmacokinetics analysis of the drug therapy of all patients.
8. Demonstrate the ability to monitor for errors by physicians, nurses and pharmacists in prescribing, administering and dispensing drugs and to resolve such problems.
9. Demonstrate a high degree of skill and proficiency in answering all drug information requests. This implies reasonable speed and completeness.
10. Demonstrate the ability to appropriately answer a drug information request with adequate documentation.
11. Demonstrate the ability to give in-depth patient presentations including -

- A. brief medical history
  - B. problem list including how problems are evaluated, and what parameters are being followed
  - C. pathophysiology of the disease state
  - D. drug history
  - E. therapeutics, including information used in monitoring therapy on the flow sheet
  - F. utilization of the drug literature to support or refute drug therapy
  - G. discharge counseling
12. Assess the nutritional status and fluid and electrolyte needs of the critically ill patient and develop a treatment plan to meet these needs.
13. Assess the cardiopulmonary status of the patient by being able to identify and utilize the pertinent data obtained from arterial blood gases and Swan Ganz catheter readings and develop a therapeutic plan that will benefit the patient.
14. Describe the function characteristics common to ventilators.
15. Describe the pathophysiology and develop treatment plans for the following disease states frequently encountered in an intensive care unit:
- A. deep vein thrombosis
  - B. pulmonary embolus
  - C. gastrointestinal hemorrhage
  - D. urinary tract infection
  - E. acute renal failure
  - F. unstable angina/myocardial infarction
  - G. shock (cardiogenic and septic)
  - H. respiratory distress syndrome
  - I. hypertension
  - J. diabetes
  - K. coagulopathy
  - L. liver disease
  - M. arrhythmias

**Geriatrics - PCTH 7505**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to independently:

1. Describe the pharmacokinetics and pharmacodynamic changes inherent to aging which influence drug therapy management.
2. Demonstrate an understanding of the basic physiologic and pathologic changes which occur in the major organ systems with aging.
3. Integrate these pathophysiologic, pharmacologic, pharmacokinetic, and pharmacodynamic considerations necessary for the initiation and modification of drug therapy in the geriatric patient.
4. Prospectively follow patients to recommend, monitor and assess drug therapy with recommended modifications in that therapy according to objectives Nos. 1, 2, and 3.
5. Prospectively monitor patients not only for potential drug: drug, drug: food, and drug: laboratory interactions, but also for adverse drug reactions and recommend appropriate interventions to minimize such interactions and effects.
6. Describe the pathophysiology, pharmacology and/or nonpharmacologic management and therapeutic controversies involved with such geriatric medicine topics as:
  - A. urinary incontinence
  - B. urinary tract infection
  - C. prostatitis
  - D. constipation
  - E. common anemias
  - F. depression
  - G. dementia
  - H. insomnia
7. Describe the rationale of the functional assessment in a geriatric patient in the ambulatory care setting.
8. Describe the significance of the interdisciplinary approach of the geriatrics team to benefit patient care.
9. Describe how this interdisciplinary approach can benefit the pharmacist who is tailoring various geriatric patients' drug regimens.
10. Demonstrate a baseline understanding of verbal and written methods (acceptable for the medical record) of communication to convey the various recommendations to the geriatric patient and family/care provider and the geriatrics team as noted in the above objectives.

## Hematology/Oncology - PCTH 7507 Learning Objectives

At the completion of this professional experience, the student should be able to independently:

1. Obtain a medication history from patients. This shall include: evaluating the patient's knowledge of the medications he/she is taking, collecting any allergy to adverse drug reaction information, inquiring about use of over-the-counter agents or herbal remedies, screening for drug-induced problems or drug interactions and assessing noncompliance.
2. Develop an appropriate assessment and plan from the information obtained in the medication history.
3. Demonstrate the ability to read a chart in order to effectively monitor drug therapy.
4. Be able to develop a rational and complete treatment plan for all acute medical problems in assigned patients. This includes the ability to monitor drug therapy using a problem-based format which includes: a problem list, goals of therapy, treatment plan and appropriate monitoring parameters.
5. Demonstrate the ability to verbally give in-depth patient presentations including:
  - A. brief medical history.
  - B. problem list.
  - C. goals of therapy.
  - D. treatment plan.
  - E. monitoring parameters.
  - F. epidemiology and pathophysiology of the disease.
  - G. treatment of the disease.
  - H. utilization of primary literature to support or refute the treatment plan
6. Identify problems concerning drug therapy including inappropriate choice of drug, of dosage form, of route of administration or of dosing schedule, duplication of drugs, drug interactions, contraindications and adverse drug reactions.
7. Demonstrate the ability to affect therapy outcomes by bringing to the medical team's attention:
  - A. the appropriateness of
    - choice of drug
    - choice of dose and dosage form
    - choice of schedule and route of administration
  - B. the necessity of all drugs prescribed
  - C. possible
    - side effects or adverse reactions
    - drug-drug interactions
    - drug-laboratory test interactions
    - drug-food interactions
    - contraindications or cautions
  - D. treatment or management of adverse reactions or drug interactions.
  - E. alternative drug treatment or regimens.
  - F. therapeutic controversies involving given drug regimens.
8. Demonstrate the ability to properly counsel patients about the appropriate use of their prescription and non-prescription medications.
9. Demonstrate the ability to perform pharmacokinetics analysis on the drug regimens prescribed.

10. Demonstrate an advanced ability to verbally disseminate clinically significant drug information regarding drug therapy when requested to do so or when it is appropriate for better patient care.
11. Demonstrate an advanced degree of skill and proficiency in answering written drug information questions when requested.
12. Describe the relationship between cell cycle kinetics and tumor growth characteristics and the construction of a rational chemotherapy regimen.
13. Describe the possible etiologies of the various types of cancer seen while on this service and relate these etiologies to methods of prevention that can be given to patients during counseling.
14. Describe the mechanism of action of each of the following classes of antineoplastic agents:
 

Alkylating Agents	Mitotic Inhibitors
Anti-Tumor Antibiotics	Hormonal Agents
Antimetabolites	Immunomodulators
Anthracycline	Derivatives
15. Describe the most common adverse effects of each of the various antineoplastic agents.
16. Describe the roles of surgery and radiation in the treatment of cancer.
17. Describe the important chemical characteristics such as stability, solubility and compatibility of each of the antineoplastic agents used while on service.
18. Construct an appropriate analgesic regimen, given patient-specific information.
19. Formulate recommendations regarding the prevention and/or management of the following chemotherapy-induced toxicities:
 

Extravasation	Bone Marrow Suppression
Nausea/Vomiting	Immunosuppression
Anorexia	Cardiac Toxicity
Alopecia	Pulmonary Toxicity
Neurotoxicity	Renal Toxicity
Sterility/Impotence	
20. Counsel patients regarding their chemotherapy as to side effects, management of those side effects and self-monitoring techniques.
21. List the monitoring parameters for therapeutic effect, endpoints and adverse reactions for each of the antimicrobial agents used while on the service.
22. Develop dosing regimens for antimicrobial agents in both the normal and physiologically abnormal (i.e., renal impairment) patient.
23. Describe the use of antibiotics in prophylactic, empiric and definitive therapies.
24. Compare and contrast the differences in susceptibility patterns, response to infection and treatment between normal and immunocompromised hosts.

**Neurosurgery - PCTH 7508**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Obtain a medication history from patients admitted to the team, screen for drug interactions, adverse drug reactions, noncompliance, drug abuse, allergies and hypersensitivities.
2. Document medication histories using an acceptable method or system.
3. Identify problems concerning drug therapy including inappropriate drug selection, dosage forms, route of administration, dosing schedules, contraindications, adverse drug reactions and drug interactions.
4. Identify communication patterns that lead to problems and demonstrate the ability to resolve those problems.
5. Demonstrate the ability to disseminate clinically appropriate drug information regarding drug therapy when requested and when indicated to improve patient care.
6. Demonstrate the ability to obtain and effectively use pertinent information from the medical record as needed for appropriate drug therapy monitoring.
7. Demonstrate the ability to monitor drug therapy and document the provision of service using such systems that include rationale, efficacy, therapeutic endpoints, drug interactions and adverse drug reactions.
8. Demonstrate the ability to counsel patients regarding the appropriate use of prescription and nonprescription medications.
9. Demonstrate the ability to appropriately and effectively apply pharmacokinetic analysis.
10. Demonstrate the ability to solve medication error problems by physicians, nurses, technicians and other pharmacists related to prescribing, distribution, or administration of medications.
11. Demonstrate a high degree of skill and proficiency in responding to requests for drug information, including appropriate support from the literature.
12. Develop a rational and complete treatment plan for all assigned patients.
13. Demonstrate the ability to provide in-depth formal and informal patient case presentations.
14. Assess the nutritional status and fluid and electrolyte needs of the critically ill patient and develop treatment plans to meet those needs.
15. Assess the cardiopulmonary status of the patient by being able to identify and utilize the pertinent data obtained from arterial blood gasses and Swan-Ganz catheter readings, and develop a therapeutic plan that will benefit the patient.
16. Describe the functional characteristics of ventilators.
17. Discuss the pathophysiology and pharmacotherapy of cerebral protection for cerebral ischemia and intracranial hypertension as they relate to subarachnoid hemorrhage, subdural hematoma, and tumors of the CNS.
18. Discuss the pathophysiology and pharmacotherapy for neurosurgical prophylaxis of infection.

**Medical Informatics - PCTH 7509**  
**Learning Objectives**

At the completion of this professional experience, the student will be able to:

1. Describe and compare the different aspects (pros and cons) of computer architecture available in hospitals today.
2. Describe the use of computer applications in healthcare.
3. Describe and discuss the applications of a hospital information system in hospital pharmacy practice.
4. Discuss the use of hospital information systems to provide prospective drug therapy Monitoring and drug use evaluation.
5. Discuss the use of hospital information systems to provide on-line decision support for drug prescribing (artificial intelligence).
6. Describe how hospital information systems can aid pharmacists in providing cost-effective pharmaceutical care.
7. Describe the benefits of a computer-stored medical record to facilitate clinical pharmacy research (e.g., pharmacoepidemiology, cost-effective analysis, cost-benefit analysis).
8. Discuss the different methods of decision-analysis used in knowledge engineering (e.g., probability and uncertainty theory, bayesian and boolian logic).
9. Describe the role of the pharmacist in medical informatics.
10. Discuss the national agendas involved in the computer-based patient record and clinical practice guidelines, with emphasis on the roles of the pharmacist and computerized clinical databases.
11. Define and discuss outcomes research and outcomes management and the role of a hospital information system in these areas.



**Ambulatory Care - PCTH 7511**  
**Learning Care Objectives**

At the completion of this professional experience, the student should be able to:

1. Describe the philosophy of the interdisciplinary approach in ambulatory care and its benefits to patients.
2. Develop the ability to communicate effectively (verbal and written) with other health care providers and patients.
3. Obtain a complete medication history from ambulatory care patients. This shall include: evaluating the patient's knowledge of the medications he/she is taking, collecting any allergy or adverse drug reaction information, inquiring about over-the-counter agents or herbal remedies, screening for drug-induced problems or drug interactions and assessing noncompliance.
4. Demonstrate the ability to review a chart (when in an ambulatory care setting) in order to effectively monitor drug therapy.
5. Develop an appropriate assessment and pharmaceutical care plan from the information obtained in the medication history. This includes the ability to monitor drug therapy using a problem-based format which includes a problem list, goals of therapy, treatment plan and appropriate monitoring parameters.
6. Actively participate as a health care provider (i.e., direct patient care, consultation with patients or their health care providers or by written communication).
7. Demonstrate the ability to verbally give in-depth patient presentations including:
  - A. Brief medical history
  - B. Problem list
  - C. Goals of therapy
  - D. Treatment plan
  - D. Monitoring parameters
  - F. Epidemiology and pathophysiology of the disease
  - G. Treatment of the disease
  - H. Utilization of primary literature to support or refute the treatment plan
8. Demonstrate the ability to properly counsel patients about the appropriate use of prescription and non-prescription medications.
9. Demonstrate the ability to utilize primary literature to answer drug information requests from health care providers.
10. Develop the ability to assist physicians, residents and/or other health care providers with drug product selection, drug dosing and screening for possible drug interactions.

## General Pediatrics Clerkship - PCTH 7512 Learning Objectives

**Content Overview:** To provide the student with an advanced clinical experience that will further enhance their knowledge and skills in the management of pharmacotherapy in the pediatric population; to promote the clinical pharmacist's role on the health care team; and to provide direct patient care to the pediatric patient population. Students participate on daily medical rounds and communicate concerns and recommendations for pharmaceutical care to physicians, nurses, and other healthcare professionals; present timely drug topics to other health care professionals. Students are expected to demonstrate professional poise and confidence in knowledge, ability, and capacity to perform meaningful clinical pharmacy services.

At the completion of this clerkship, the student must be able to:

1. Given a specific problem, identify the therapeutic problem, analyze clinical data, synthesize a plan, and evaluate the effectiveness of the plan.
2. Identify problems concerning drug therapy including inappropriate choice of drug therapy, dosage form and dosage schedule, duplication of drugs, drug interactions, contraindications and adverse reactions.
3. Communicate effectively regarding issues pertaining to drug therapy to other members of the health care team.
4. Develop a therapeutic plan for pediatric medication dosing including mg/kg dosing and the increased risk of having an overdose
5. Monitor drug therapy appropriately including rationale, efficacy, therapeutic endpoints, drug interactions, and real or potential adverse drug reactions in the pediatric patient.
6. Perform pharmacokinetic analysis of drug therapy with respect to the pediatric patient.
7. Retrieve and analyze appropriate evidence-based information important for developing a pharmacotherapeutic plan specific for a patient.
8. Develop personal characteristics of behavior and deportment reflective of high standards of professional ethics, emotional maturity, and personal and professional integrity.
9. Relate an understanding for the health care delivery system and the role of each professional within the health care system.
10. At the completion of the rotation, the student should demonstrate competencies as listed above for the following disease states. Other disease states will be addressed as they present themselves on clerkship:

Reactive Airways Disease

Pediatric and Neonatal Sepsis and Meningitis

Formulas/Oral Rehydration Solutions/Gastroenteritis

Immunizations

Seizure Disorders and Febrile Seizures

Pediatric Cough and Cold Products

Type I Diabetes/DKA

RSV Bronchiolitis/Croup

Pneumonia and Empyema  
Cystic Fibrosis  
Kawasaki Disease  
GERD

**Text / Reading List:** Required readings are up to the discretion of the preceptor.

**Weekly Schedule of Topics and Due Dates:** To be determined by the preceptor.

**Neonatology - PCTH 7513**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Identify and explain physiologic factors which may alter the disposition of drugs in premature infants.
2. Identify patients at risk for infection and discuss risks and benefits of antimicrobial therapy in each group.
3. Explain the pathophysiology, and pharmacologic interventions complete with a list of monitoring parameters for assessing outcome in patients treated for neonatal:
  - A. sepsis
  - B. meningitis
  - C. congestive heart failure
  - D. hypotension
  - E. intracranial hypertension
  - F. primary apnea
  - G. respiratory distress syndrome
  - H. hyaline membrane disease
  - I. bronchopulmonary dysplasia
  - J. maternal-infant blood incompatibility
  - K. congenital heart disease.
4. Identify indications for parenteral nutrition in premature infants and list outcome indicators.
5. List the caloric, protein, carbohydrate, lipid, vitamin, electrolyte and fluid requirements of preterm infants.

**Pediatric Critical Care – PCTH 7514**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Identify problems concerning drug therapy including inappropriate choice of drug therapy, dosage form and dosage schedule, duplication of drugs, drug interactions, contraindications and adverse reactions.
2. Demonstrate the ability to communicate effectively regarding issues pertaining to drug therapy to other members of the health care team.
3. Demonstrate the ability to monitor drug therapy appropriately including rationale, efficacy, therapeutic endpoints, drug interactions, and real or potential adverse drug reactions.
4. Describe the pharmacokinetics parameters in the pediatric patient and its effects on drug therapy.
5. Demonstrate the ability to perform pharmacokinetics analysis of drug therapy.
6. Describe the rationale for medications commonly used in an intensive care setting, including absorption, distribution, metabolism, excretion and mechanism of action.
7. Demonstrate the ability to present timely drug topics to other health care professionals.

**Infectious Disease - PCTH 7515**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Describe the etiology, incidence, pathophysiology, clinical course with complications, traditional anti-infective/medication therapies and possible investigational anti-infective which may be considered for those infectious diseases encountered during the clerkship.
2. List general subjective and objective monitoring parameters which are required to follow and monitor the outcome of the patient having any infectious disease.
3. List specific subjective and objective monitoring parameters utilized for the patient who may receive any one or several of the following anti-infective agents: Aminoglycosides, 1st, 2nd, 3rd generation cephalosporins, penicillin, extended-spectrum penicillins, PCN-ase resistant penicillins, clindamycin, erythromycin, azithromycin, clarithromycin, metronidazole, imipenem, aztreonam, vancomycin, chloramphenicol, trimethoprim-sulfamethoxazole, available quinolones, antituberculous drugs, amphotericin, ketoconazole, fluconazole and any other anti-infective agent encountered during the clerkship.
4. List the therapeutic endpoints necessary for the completion of an anti-infective regimen.
5. Describe and compare dosing considerations required in the general patient versus the renally impaired patient utilizing pharmacokinetics and pharmacodynamic considerations for any of the agents listed in objective No. 3.
6. Define the mechanism of action of the various agents listed in objective No. 3.
7. Describe the controversies surrounding anti-infective prophylaxis (e.g., surgical, urological, etc.).
8. List the differences in susceptibility patterns, common infecting organisms, and response to infection between the normal and compromised host.
9. Define and differentiate between the following microbiologic tests while listing their respective advantages and disadvantages -
  - A. Kirby-Bauer method
  - B. minimum inhibitory concentrations (MICs)
  - C. minimum bactericidal concentrations (MBCs)
  - D. serum inhibitory concentrations
  - E. serum bactericidal titers (SBTs)
  - F. synergism tests
10. Describe the role of the pharmacist on the infectious disease consult team.

**Rehabilitation Medicine - PCTH 7517**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Obtain a complete drug history from the patient, family or medical records; evaluate and assess pertinent medication history data in a documented format.
2. Counsel patients, family members or care giver about the appropriate use of medications.
3. Offer a rational explanation for medication changes on all Rehabilitation Medicine patients (when applicable).
4. Identify and prioritize patient-related drug problems and offer a reasonable therapeutic goal for each identified problem.
5. Describe the pathophysiology, treatment and parameters to monitor the efficacy and adverse effects of drugs used to manage the following complications:
  - A. urinary tract infections
  - B. pressure sores
  - C. autonomic dysreflexia
  - D. neurogenic bladder and bowel
  - E. spasticity
  - F. chronic, non-malignant pain
  - G. pulmonary embolism and deep venous thrombosis
  - H. neurological disorders involving: head injury; spinal cord compression; cerebrovascular disease; seizure; alcohol withdrawal
6. Describe the neurophysiological basis for pain relief utilizing the following non-drug treatment modalities:
  - A. transcutaneous electrical nerve stimulation (TENS)
  - B. electrical stimulation
  - C. relaxation therapy / hypnosis
  - D. heat and cold
  - E. acupuncture
7. Provide drug information in a timely manner to patient care team members individually, through in-service sessions, and during team rounds.
8. Describe the functions of the following interdisciplinary team members:
  - A. physical therapists
  - B. occupational therapists
  - C. social workers
  - D. clinical psychologists
  - E. speech therapists
  - F. nurses
  - G. physicians
  - H. kinesiotherapists
  - I. recreational therapists
  - J. vocational rehabilitation therapists
9. Document a clear and comprehensive assessment (with plan) for ambulatory care patients being managed for chronic, non-malignant pain.

**Neurology - PCTH 7519**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Obtain a complete drug history from all patients admitted to the Neurology Service and from selected patients on the consultation service.
  - A. identify drug-related problems (e.g., compliance, allergies, idiosyncratic reactions) which should be brought to the attention of the appropriate individual
  - B. coordinates drug history activities with the responsible staff pharmacist
2. Review patient drug regimens daily, identify drug-related problems, and communicate that information to the responsible resident.
3. Coordinate efforts with the resident(s) in Neurology and staff pharmacists to instruct patients about their medications.
4. Respond to drug information questions in a timely and complete manner.
5. Develop therapeutic regimens, monitor parameters, and therapeutic endpoints for the following neurological problems and their complications:
  - A. generalized and partial epilepsies
  - B. multiple sclerosis
  - C. Parkinson's disease
  - D. stroke
  - E. transient ischemic attacks
  - F. vascular headache
  - G. peripheral neuropathies
  - H. idiopathic orthostatic hypotension
  - I. myasthenia gravis
  - J. Guillian-Barre syndrome
  - K. cerebral edema
  - L. trigeminal neuralgia
6. Describe the pathophysiology, etiology and management of the following drug-induced neurological disorders:
  - A. peripheral neuropathies
  - B. penicillamine-induced myasthenic syndrome
  - C. myopathy
  - D. seizures
7. Compare the epidemiology, pathophysiology, natural course, and drug/nondrug management of generalized and partial epilepsies:
  - A. given a patient and anticonvulsant agent, calculate the dose required to achieve a predetermined plasma concentration
  - B. state the limitations of commonly used methods for estimating anticonvulsant doses
  - C. describe the benefits and limitations which occur from interpretation of actual anticonvulsant plasma concentrations



8. State the adverse effects which can occur secondary to long term anticonvulsant therapy, and describe the postulated mechanisms by which these effects occur.
9. Describe the pathophysiology and natural course of Parkinson's disease and relate the mechanisms of action of currently used therapeutic agents to the neurochemical changes which occur with progression of the disease.
10. Compare the use of heparin, warfarin, and antiplatelet agents in the management of progressing stroke.
11. Compare the efficacy of antiplatelet agents and warfarin in the management of transient ischemic attacks.
12. Compare motor, receptive and global aphasia:
  - A. describe a method which can be used by pharmacists to distinguish between the types of aphasia
  - B. identify the type(s) of aphasia which would interfere with patient-pharmacist communication
13. Relate the pathophysiology of myasthenia gravis to drugs which are indicated and contraindicated.

## **Addiction Medicine - PCTH 7520**

### **Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Demonstrate an appreciation for the need for pharmacists to become more actively involved in providing advice and services for people affected by addictions and substance abuse problems.
2. Recognize these disorders and make appropriate referrals when needed.
3. Define the basic biochemical and pharmacological properties and physiological actions of the major drugs of abuse and associated neurotransmitters.
4. Identify biological, psychological, social and individual factors which may predispose people to compulsive use of psychoactive drugs or other compulsive behaviors.
5. Describe goals of treatment for the patient suffering from chemical dependency or other addictive disorders.
6. Discuss and be able to design a therapeutic plan for detoxification or withdrawal for the major drugs of abuse.
7. Describe the Twelve Steps of recovery and their role in treatment and recovery from chemical dependency and other addictive disorders.
8. Discuss the modalities used in treatment of chemical dependency and other addictive disorders.
9. Recognize and list useful national, state and local referral resources.

#### **Service Responsibilities:**

1. Assist with patient assessments by obtaining, assessing and documenting drug use and medication use histories.
2. Provide individual counseling sessions to patients regarding:
  - A. prescription and over-the counter (OTC) medication usage to encourage appropriate use and assure compliance.
  - B. possible drug interactions which may occur with methadone and other medications, alcohol and other drugs and medicines, etc.
3. Conduct an educational group during the month for patients in one of the following areas:
  - A. how illness can affect recovery.
  - B. wise use of prescription and OTC medications for recovering addicts.
4. Assist in reviewing urine screening results to assess possible drug interactions and interference.
5. Assist in tracking, assessing and documentation of adverse drug reactions and side effects among patients.
6. Attend group therapy sessions where appropriate.

7. Participate in weekly team and clinical staffing meetings.
8. Prepare and present a brief staff inservice during the month.
9. Conduct medical chart reviews for detox meds, medication and drug use histories, and appropriate medication usage as needed.
10. Monitor drug therapy of all assigned patients.
11. Schedule and provide individual medication counseling as needed.

**Didactic Responsibilities:**

1. At the end of this clerkship, the student will be given an oral or written examination to assess the knowledge and skills obtained during the clerkship.
2. Weekly, the student will prepare and present a formal case conference on a patient he/she has followed. The presentation will be one hour in length.
3. Weekly, during the clerkship, the candidate will prepare and present discussion on a relevant topic. The presentation will be one hour in length.
4. Other didactic activities assigned by the preceptor may include required readings, writing assignments, and other tasks.

**Site Description:**

Patient Population: adult Veterans ages 20-99 years; alcohol and all other imaginable psychoactive drug abuse.

Detoxification (Outpatient): 7-10 day clinic follow-up is typical. Medical management of withdrawal conditions. Some inpatient consultations.

Rehabilitation (OSAT): Variable outpatient treatment program. Includes initial evaluation, outpatient and inpatient, individual counseling and group therapy as well as medication management.

Comprehensive Smoking Cessation Program: A 6 week program with additional follow-up, incorporating pharmacotherapy, hypnosis, education, and counseling for smoking cessation. Pharmacist meets with patients weekly.

Mental Health Primary Care Clinic: Pharmacist provides pharmaceutical care for mental health patients also being managed for medical problems.

**Nuclear Pharmacy - PCTH 7522**  
**Learning Objectives**

At the conclusion of this professional experience, the student should be able to:

1. Describe and use the procurement and inventory control system common to the site.
2. Perform the functions related to the handling and storage of shipments of radioactive materials.
3. Describe the rationale behind the arrangement of the nuclear pharmacy floor plan.
4. Describe the relationship of the parent-daughter generator system and be aware of the maximum allowable impurities in eluates.
5. Describe the differences between the wet column versus dry column generator.
6. Have a basic understanding of the parameters involved in kit preparation of radiopharmaceuticals, the precautions necessary to insure reasonable quality and the stability problems associated with these kits.
7. Have a general understanding of the diagnostic and therapeutic applications of radionuclides, the radiopharmaceuticals used, and the method of localizations.
8. Calculate the half-life and its decay factor for any given period of time given the decay constant of a radionuclide.
9. Explain the basic units and relationship between exposure, absorbed dose and biological equivalent dose.
10. List the possible biological consequences of different levels of radiation exposure in humans.
11. Describe the basic types of instrumentation utilized in both a clinical nuclear medicine facility and a radiopharmacy.
12. Explain and demonstrate proper radiation safety practices utilizing the ALARA concept.

**Clinical Management - PCTH 7524**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Describe the function and purpose of P & T Committees.
  - A. attend a P & T meeting
  - B. complete the required readings on the P & T Committee
  - C. prepares a drug monograph and present it at the P & T meeting
  - D. review the formulary management procedures
2. Describe the organization structure of the Department of Pharmacy Services.
  - A. describe how the structure of a department facilitates or hinders clinical services
  - B. describe ways to effectively deal with an ineffective structure
  - C. describe the role of each management position within the Department
3. Describe the purpose and function of policies and procedures.
  - A. review the DIS policies (Section 12) and the Medication Section (Section 9) of the Department policies
  - B. writes a policy and procedure using the Hospital format
4. Describe the JCAHO required functions of a Pharmacy Department, P & T functions, DUE activities, quality insurance (QI) activities, ADR reporting and Infection Control.
  - A. read the accreditation standards on these activities
  - B. evaluate if University Hospital meets the standards
5. Discuss with the Director of Pharmacy budgeting and personnel issues. After this discussion:
  - A. describe the budgetary issues that face most Pharmacy Directors
  - B. outline an approach for budgeting for pharmacy services
6. Discuss with the Assistant Director of Pharmacy for Administrative Services personnel and quality assurance issues. After these discussions:
  - A. describe the issues involved in hiring and disciplining personnel
  - B. outline a quality assurance program for pharmacy services
7. Discuss with the Associate Director of Pharmacy for Inpatient Clinical Services planning and organizing for clinical services. After these discussions:
  - A. outline a plan for justifying clinical services
  - B. describe the steps you would use to implement a clinical service
  - C. list the administrative concerns that arise when developing and implementing clinical services
  - D. describe the problems in recruiting and retaining qualified pharmacists
8. Participate in the Drug Usage Evaluation Program, Adverse Drug Reaction Program and Quality Insurance activities.
  - A. describe the purpose, structure, and process of each program
  - B. write criteria
  - C. collect data
  - D. analyze results

9. Write a position description.
10. Read one book on management. (Choice of books should be approved by the instructor and may include: In Search of Excellence, The One Minute Manager, Taking Control of your Time and your Life, Hospital Pharmacy Management Primer, and Megatrends.)
11. Write a proposal.
12. Discuss ways in which clinical services are justified.
  - A. analyze monthly DIS activity reports
  - B. describe the purpose and process of the Pharmacist's Intervention Program
13. Coordinate on-call DIS activities.
14. Participate in the production of DIS publications.
  - A. write articles for the DIS publications
  - B. describe the purpose of newsletters
  - C. discuss ways to make newsletters more effective
  - D. edit DIS publications
  - E. distinguish the role of an author and the role of an editor
15. (Optional) Investigational Drug Studies Program. Describe the IDS program at University Hospital. Outline how you would approach establishing and justifying this type of service.
16. Maintain a guided journal. (The instructor will make assignments for the journal during the clerkship.).
17. Supervise DIS activities as assigned.
18. Define the roles of a manager or supervisor.

**Surgical Intensive Care - PCTH 7525**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Anticipate and provide the critical care team with accurate and useful drug information.
2. Collect and assimilate patient specific data (i.e., via chart, nursing notes, interacting with the team) in order to solve or prevent drug related problems.
3. Develop a systematic method/approach to monitoring patients in SICU.
4. Provide a useful in-service for the physicians and/or nursing staff.
5. Describe the rationale for specific laboratory monitoring done in the SICU.
6. Understand hemodynamic monitoring and how it relates to the selection of pressers, colloids, crystalloid and other medications.
7. Individualize a nutritional regimen and assist physicians in writing nutritional orders.
8. Select appropriate antibiotics for typical nosocomial infections seen in postsurgical ICU patients.
9. Apply pharmacokinetic principals and skills for dosing and monitoring aminoglycosides and other drugs.
10. Utilize available drug information resources to solve drug problems and educate team members.
11. Demonstrate the ability to discuss drug therapy in the following areas of surgery:
  - A. stress ulcer prophylaxis
  - B. acute renal failure
  - C. coagulopathy
  - D. DVT prophylaxis
  - E. infectious disease
  - F. shock syndromes
  - G. pain management
  - H. Acute Respiratory Distress Syndrome (ARDS)

**Ambulatory Neuroscience - PCTH 7526**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to demonstrate effective, direct patient care as evidenced by:

1. Talking to patients in a way that is non-threatening.
2. Conducting medication histories, including prescription, OTC, health food store or nutritional products; included should be pertinent information about the history of the allergies and adverse drug reactions (ADRs).
3. Counseling patients in a manner that includes information about the newly prescribed drug, including the purpose of the medication, specific instructions about how to use the medication, when to expect the desired outcome(s), and possible side effects that may occur; patients should also be counseled about whether or not the medication should be refilled, and about possible drug-interactions with the newly prescribed medication.

Effective clinical services provided to health-care practitioners at Clinic 8 - Neuroscience as evidenced by:

4. Providing information about specific medications used in neuroscience, including best choice for the individual patient, proper dosing, and monitoring parameters
5. Helping providers evaluate the efficacy of a medication.
6. Helping providers scan for ADRs.
7. Helping providers choose the most cost-effective tests needed to monitor medications.
8. Using pharmacokinetic principles, help providers determine appropriate follow-up time for medications and laboratory tests.

Effective communication skills as evidenced by:

9. Providing one weekly written medication history involving a neuroscience clinic patient.
10. Providing two topic presentations involving neuroscience issues such as epilepsy, Parkinson's disease, multiple sclerosis, Alzheimer's disease, motor neuron disease, myasthenia gravis, sleep disorders, drug-induced movement disorders, peripheral neuropathies, stroke, trigeminal neuralgia, chronic-inflammatory polyneuropathy, headache, etc.
11. Doing five call backs weekly to patients who have received prescriptions for new medications from neuroscience clinic providers.
12. Recording and following-up five consults done for providers.
13. Performing one formal patient education program, as the opportunity arises.



Increase knowledge base of commonly-treated conditions in the neuroscience clinic such as epilepsy, Parkinson's disease, multiple sclerosis, stroke, Alzheimer's disease, headache, motor neuron disease, depression, drug-induced psychosis, spasticity, tremor, insomnia/sleep disorders, neuropathic pain, etc., as evidenced by:

14. Presentation of two major cases involving one of the above disorders.
15. Performing a chart review of patients with at least two of the different disorders listed above.
16. Participating in "pharmacy vignettes" presented by the preceptor and/or other pharmacy students.
17. Being able to identify monitoring parameters for pharmacologic and non-pharmacologic treatment of the above disorders.
18. Participate in at least one epilepsy surgery conference.
19. Attend Neurology/Neurosurgery Grand Rounds on a weekly basis.
20. Observe an electroencephalogram (EEG) test and one of the following tests: polysomnogram (PSG), multiple sleep latency test (MSLT), electromyogram (EMG), nerve conduction study (NCV), evoked potential test (EP).

**Bone Marrow Transplantation - PCTH 7527**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Demonstrate the ability to interview patients with completeness to obtain a medication history using an acceptable format.
2. Demonstrate the ability to retrieve necessary medical information from the patient's medical record to assess the patient's drug therapy and progress of their disease.
3. Demonstrate the ability to monitor drug therapy to include rationale, efficacy, therapeutic endpoints, drug interactions and adverse effects.
4. Demonstrate the ability to respond appropriately to any drug information request and to disseminate clinically useful drug information.
5. Develop a rational individualized treatment plan for assigned patients including:
  - A. drug selection
  - B. dose, route, schedule, dosage form
  - C. alternate treatment regimens
6. Demonstrate the ability to discuss drug therapy in the following areas of transplantation:
  - A. venoocclusive disease
  - B. neutropenic fever
  - C. acute and chronic GVHD
  - D. infectious diseases (IP, CMV)
  - E. pain management
7. Demonstrate the ability to communicate therapeutic treatment information to other health-care professionals.
8. Demonstrate the ability to give patient presentations discussing the medical history, problem list, pathophysiology of the disease state, therapeutic interventions with monitoring parameters, and literature supporting the decision and position.
9. Demonstrate the ability to undertake self-learning and initiate clinical pharmacy activities.
10. Demonstrate the ability to counsel patients about the appropriate home use of their medications, both prescription and nonprescription.

## Pharmaceutical Industry - PCTH 7531 Learning Objectives

### Student Activities:

The clerkship will involve the pharmacy student participating in the daily activities of a Scientific Manager (SM). Every week, the SM will be traveling to hospitals, managed care institutions, and large group practices to discuss clinical protocols and information. The student would spend the majority of time learning about and being exposed to the SM activities within various disease states such as infectious diseases, respiratory disease, cardiovascular disease, or diabetes.

During days that there are no appointments, the pharmacy student will be in the library working on activities/projects that will mirror the current clinical initiatives of the SM. The student and SM will communicate each day either in person, by telephone or e-mail. Each day the student will be expected to be available from 8:30 AM to 4:30 PM. Attendance at educational programs presented by the SM in the evening hours or on weekends could potentially be requested. This would be arranged with the student at the beginning of the clerkship experience.

Student responsibilities include but are not limited to the following:

1. Evaluate the current medical literature as it pertains to:
  - A. Pharmacokinetics
  - B. Pharmacodynamics
  - C. Disease state pathophysiology
  - D. Pharmacotherapy
2. Design power point presentations on clinical topics
3. Review presentations developed with the SM
4. Communicate effectively with health care professionals regarding disease state treatment guidelines and pharmacotherapy under the direct supervision of the SM
5. Utilize resources (library, Internet, etc.) to research clinical topics and research topics

Students will travel with the preceptor each week to health care institutions/offices and managed care accounts. Students should be prepared to formally present clinical pharmacotherapy and disease state topics to the preceptor during the scheduled appointment days.

In addition, students are required to complete a major assignment during the six-week clerkship. This will be decided amongst the student and preceptors during the first week of the clerkship experience. In addition, standard assignments will include journal club presentations and a pharmacotherapy/disease state power point presentation.

### Goals:

1. To provide the student with the opportunity to interact with health care professionals from different backgrounds and to recognize the pharmacist's role within the pharmaceutical industry.
2. To apply prior academic knowledge to the therapeutic management of patients with disease so that the student is able to:
  - A. Communicate with health care professionals concerning pharmacotherapy options in the three outlined therapeutic areas.
  - B. Evaluate the medical literature and its impact on current pharmacotherapy decisions

- C. Summarize and condense volumes of literature into concise documents or presentations
  - D. Understand the regulatory guidelines and processes adhered to by the pharmaceutical industry regarding drug development, research, and interaction with health care professionals
3. To gain experience and confidence in articulating scientific information to health care professionals in an organized and precise manner

**Objectives:**

At the end of the clerkship, the PharmD. student should be able to:

1. Describe the role of the Medical Education department within a large pharmaceutical company
2. Discuss the relationship between the Medical Education Department and the FDA, Medical Research, Marketing, National Education & Strategy, and Medical Information Services Departments
3. Understand the pathophysiology of various disease states such as community acquired pneumonia (CAP), acute maxillary sinusitis (AMS), acute exacerbations of chronic bronchitis (AECB), anemias, asthma, acute coronary syndromes (ACS), venous thromboembolic disease (VTE), or diabetes
4. Critique and discuss the medical literature to other health care professionals
5. Present the currently accepted guidelines for the various disease states studied.
6. Determine the role of pharmacokinetics and pharmacodynamics as it pertains to the medications used in the various disease states.
7. Communicate precise and accurate information to other health care professionals about the various drug classes.

**Clerkship Requirements:**

1. Major assignments
  - A. Journal Club Presentation
    - i. This is a 20-minute oral presentation (likely via a conference call to a group of Scientific Managers) of a clinical study plus a 2-3 page handout. The study should be recent, related to infectious disease, respiratory disease, diabetes or cardiovascular disease. The student will be expected to present 2- 3 of these during the clerkship
  - B. Pharmacotherapy/Disease State PowerPoint Presentation
    - i. This is a 20-minute oral presentation of a drug, drug class, treatment guidelines, or disease state pathophysiology given to an internal Aventis Scientific Manager audience. The presentation should include a handout of the PowerPoint slides.
  - C. Per Clerkship Project
    - i. One project, decided upon by the student and preceptor will be completed as agreed upon during the 6 week clerkship.
2. Preceptor meetings
  - A. The preceptor and student shall meet as least three times per week to discuss disease states and pharmacotherapy topics. Students should be prepared to discuss current issues and recently published studies in the medical literature.

**Investigational Drug Service - PCTH 7532**  
**Learning Objectives**

At the completion of this clerkship, the student should be able to:

1. Describe the importance of an investigational drug service as it relates to pharmacy services.
2. Describe the role of an investigational drug service pharmacist within an institution's commitment in providing support for conducting research.
3. Attend an Institutional Review Board (IRB) panel meeting and describe the role of an IRB.
4. Write effectively to communicate instructions with clarity.
5. Develop an investigational drug notebook for the pharmacy staff.
6. Communicate a study notebook (study protocol) to the pharmacy staff.
7. Distinguish study designs, single-center and multi-center studies, sponsor-supported and investigator-initiated studies, and recognize the investigational drug pharmacist's role within each study's structure.
8. Describe certain methods of blinding in pediatric and adult studies.
9. Describe the role of a principal investigator, study coordinator and other members of a research team.

**Solid Organ Transplantation - PCTH 7533**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

In the Outpatient Transplant Clinics:

1. Complete a comprehensive medication history which can be utilized by the multidisciplinary transplant team during an outpatient clinic visit.
2. Identify and document important patient-specific monitoring parameters for each patient's medication profile to be provided to the transplant team.
3. Assess pharmacy-related issues including access to medications and medication compliance.
4. Discuss basic issues regarding choice of maintenance immunosuppressive regimens.
5. Understand the basic principles of the organ specific transplant protocols (i.e., adult and pediatric renal transplant protocols, heart transplant protocols, and lung transplant protocols).
6. Identify issues related to the organ specific protocols and address changes in patients' current medication regimen.

In the Inpatient Area:

1. Demonstrate the ability to monitor drug therapy including: adherence to set protocols, efficacy, rationale, therapeutic endpoints, adverse events.
2. Monitor for clinically relevant drug interactions with medications commonly used in solid organ transplantation.
3. Develop a rational individualized pharmacotherapeutic treatment plan for transplant patients.
4. Provide effective discharge counseling for newly transplanted patients with appropriate documentation.
5. Provide appropriate plans for the transition from the inpatient to the outpatient setting with regard to pharmacy related issues.

**Indian Health Service (IHS) Adult Medicine - PCTH 7534**  
**Learning Objectives**

This clerkship experience provides students the opportunity to apply their clinical skills in a hospital inpatient setting providing care to Native American patients.

At the completion of this professional experience, the student should be able to:

1. Describe the philosophy of the interdisciplinary approach in an inpatient setting and its benefits to Native American patients.
2. Explain the organization and utilization of the patient chart used in Indian Health Service clinics.
3. Demonstrate the ability to review a chart in order to effectively monitor drug therapy.
4. Obtain a complete medication history from patients admitted to the medical team. This shall include: evaluating the patient's knowledge of the medications he/she is taking, collecting any allergy or adverse drug reaction information, inquiring about over-the-counter agents, herbal remedies, screening for drug-induced problems or drug interactions and assessing compliance.
5. Develop the ability to communicate effectively (verbal and written) with other health care providers and patients, including the use of the "3 prime question" approach to assessing level of understanding.
6. List three barriers to effective pharmacist/patient communication in the Native American population.
7. Develop a rational and complete treatment plan from the information obtained in the medication history/chart review for all acute medical problems in assigned patients. This includes the ability to monitor drug therapy using a problem-based format which includes a problem list, goals of therapy, and appropriate monitoring parameters.
8. Identify problems concerning drug therapy including inappropriate choice of drug, of dosage form, of route of administration or of dosing schedule, duplication of drugs, drug interactions, contraindications and adverse drug reactions.
9. Demonstrate the ability to verbally give in-depth patient presentations including:
  - A. Brief medical history
  - B. Problem list
  - C. Goals of therapy
  - D. Treatment plan
  - E. Monitoring parameters
  - F. Epidemiology and pathophysiology of the disease
  - G. Treatment of the disease
  - H. Utilization of primary literature to support or refute the treatment plan
10. Actively participate as a health care provider via direct patient care or consultation with the health care provider.
11. Demonstrate the ability to perform pharmacokinetics analysis on the drug regimens prescribed.
12. Demonstrate the ability to utilize primary literature and to answer drug information requests with skill and proficiency when requested by health care providers.
13. Develop the ability to assist IHS health care practitioners with drug product selection, drug dosing and screening for drug interactions.

## **Advanced International Experience: Thailand – PCTH 7535**

### **Learning Objectives**

#### **Goals**

The general goals of the clerkship are to help the student gain an understanding of the availability of healthcare resources and the delivery of healthcare, and to understand the role of the pharmacist as it pertains to the provision of healthcare in Thailand, an emerging nation. The student will be exposed to a variety of healthcare settings including hospitals, community clinics, pharmacies, alternative medicine (herbal) clinics and regulatory agencies. There is an exchange of ideas and education between the University of Utah and Chiang Mai University.

#### **Objectives**

At the completion of this clerkship, the student will be able to:

1. Discuss five major differences between the healthcare system of Thailand and the U.S. Discuss costs of health care/GDP, availability of resources and types of health programs developed.
2. Compare and contrast the role of the pharmacist in Thailand versus the U.S. within the hospital (inpatient and outpatient) and the community (University and private) settings especially as it pertains to clinical pharmacist's roles and responsibilities.
3. Describe the pharmacies visited in Thailand, including community – private, community – University, and hospital pharmacies – both outpatient and inpatient. Compare and contrast the following in each of the settings:
  - a. Inventory control
  - b. Prescription control
  - c. Personnel
  - d. Medication error/ patient safety
  - e. Patient counseling
  - f. Regulatory issues
4. Describe the role that alternative therapy and herbal medicine has in the delivery of healthcare in Thailand.
5. Prepare traditional Thai herbal products; medicine ball, mosquito repellent, and herbal tea.
6. Describe the history, epidemiology, vectors/ sources, treatments, and patient outcomes of the following infectious diseases:
  - a. Tuberculosis
  - b. Malaria
  - c. HIV
  - d. Leprosy
  - e. Dengue fever
  - f. Chikungunya
  - g. Avian influenza



7. List three methods of vector control that employed in Thailand and specific examples of each. Describe the concerns associated with these methods.
8. Describe the beliefs of Buddhism that play into the Thai philosophy of health care.
9. Describe the demographics of the Thai population, including life expectancy, causes of death, infant mortality, death statistics of populations, and emerging diseases.
10. Discuss the application of the Thai health care system in the United States; including what we can learn from their experiences and what we can adopt in our country.
11. Discuss cultural competency issues that you faced in Thailand and what skills you used to provide a mutually respectful relationship.

**Indian Health Service (IHS) Ambulatory Care – PCTH 7536**  
**Learning Objectives**

This clerkship experience provides students the opportunity to apply their clinical skills in an ambulatory rural setting to Native American patients.

At the completion of this professional experience, the student should be able to:

1. Describe the philosophy of the interdisciplinary approach in ambulatory care and its benefits to Native American patients.
2. Develop the ability to communicate effectively (verbal and written) with other health care providers and patients, including the use of the “3 prime question” approach to assessing level of understanding.
3. List three barriers to effective pharmacist/patient communication in the Native American population.
4. Explain the organization and utilization of the patient chart used in Indian Health Service clinics.
5. Demonstrate the ability to review a chart in order to effectively monitor drug therapy.
6. Obtain a complete medication history from ambulatory care patients. This shall include: evaluating the patient’s knowledge of the medications he/she is taking, collecting any allergy or adverse drug reaction information, inquiring about over-the-counter agents, herbal remedies, screening for drug-induced problems or drug interactions and assessing compliance.
7. Develop an appropriate assessment and pharmaceutical care plan from the information therapy using a problem-based format which includes a problem list, goals of therapy, treatment plan and appropriate monitoring parameters.
8. Actively participate as a health care provider via direct patient care or consultation with patients and/or the health care provider in the IHS clinics.
9. Demonstrate the ability to verbally give in-depth patient presentations including:
  - A. Brief medical history
  - B. Problem list
  - C. Goals of therapy
  - D. Treatment plan
  - E. Monitoring parameters
  - F. Epidemiology and pathophysiology of the disease
  - G. Utilization of primary literature to support or refute the treatment plan
10. Demonstrate the ability to utilize primary literature to answer drug information requests from health care providers.
11. Develop the ability to assist IHS health care practitioners with drug product selection, drug dosing and screening for drug interactions.

**Outcomes Research/Pharmacoeconomics - PCTH 7538**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Describe in general terms pharmacoeconomics and outcomes research including the difference between the two.
2. Describe how outcomes research data differs from clinical trial data including how data is collected and the limitation of each type of research.
3. Define and describe, including strengths and weaknesses for the following:
  - A. Cost Minimization Analysis
  - B. Cost Benefit Analysis
  - C. Cost Effective Analysis
  - D. Cost Utility Analysis
  - E. Discounting
  - F. Sensitivity Analysis
4. Through participation in an Outcomes Research or Pharmacoeconomics project describe in detail:
  - A. Specific Aim
  - B. Methods
  - C. Data Collection Process
  - D. IRB Requirements
  - E. Patient confidentiality issues
  - F. Data Analysis plan
  - G. Results
  - H. Conclusions
5. Prepare and present a 15 minute summary of the project including issues in #4 above as appropriate.
6. Improve verbal and written communication skills through participation in a project including preparing an abstract, writing a report summarizing the project, and preparing a project proposal as appropriate to the projects available at the time of the project.
7. Discuss the following books:
  - A. Practical Pharmacoeconomics (LE Baskin)
  - B. The Role of Pharmacoeconomics in Outcomes Management (NE Johnson, DB Nash)

**Clinical Research Clerkship - PCTH 7540**  
**Learning Objectives**

**Course Description:** An elective clerkship for doctor of pharmacy students.

**Course Objectives:** At the completion of this clerkship, the student will be able to:

1. Describe the role of the pharmaceutical industry in US healthcare.
2. Describe the structure of a full-service pharmaceutical company.
3. Describe the general focus of the different functions within a pharmaceutical company and explain how they interact to produce marketed pharmaceuticals.
4. Describe the source of global and US regulations affecting the pharmaceutical industry.
5. Describe the phases of drug research within the pharmaceutical industry.
6. Describe general clinical study designs and features and discuss the appropriate application of such.
7. Describe basic pharmacokinetic parameters and how they are used to evaluate pharmaceuticals.
8. Describe the purpose of a clinical research protocol and how it is created.
9. Describe the steps of conducting a clinical study, including the growing role of the various vendors and consultants in this process.
10. Describe the purpose of a clinical study report and how it is created.
11. Complete a research project with the clinical operations or clinical scientific group.
12. Prepare and present a 30 minute summary of the selected clinical research project.
13. Evaluate and discuss assigned books that touch on aspects of clinical research.

**Weekly Schedule of Topics and Due Dates:**

<b><i>Activity 1: One: one sessions with the Director of Clinical Research</i></b>
Daily sessions will be scheduled with the Director of Clinical Research to discuss information from the readings and one: ones with others. Ad hoc meetings will also occur with the Director as necessary.
Approximately 40 hours. Applies to the fulfillment of learning objectives #1-13.

<b><i>Activity 2: One: one sessions with Clinical Research staff</i></b>
1 hour meetings with the following individuals will occur in order to understand their job functions and learn how they work with the entire research team to bring a drug to market:
<ul style="list-style-type: none"><li>• Director of Clinical Operations</li><li>• Director of Data Management</li></ul>

- Director of Biostatistics
- Senior Principal Scientist
- Associate Director of Clinical Operations
- Senior Clinical Research Associate (will discuss in-house *and* field work)
- 1 individual from the data management group
- 1 individual from the statistical group
- 1 individual from the project management group
- 1 individual from the regulatory group

Approximately 10 hours. Applies to the fulfillment of learning objectives #1-10.

**Activity 3: Personal study (all texts will be loaned, except that the CFR/ICH Reference Guide will be gifted to the student)**

Read the following:

1. All pages of *Understanding Pharma; A Primer on How Pharmaceutical Companies Really Work*. Campbell J, 2005; Pharmaceutical Institute, Inc., Raleigh, NC.
2. Parts 1, 2, 4, 6, and 7 of *Guide to Clinical Trials*. Spilker B, 1996; Lippincott-Raven Publishers, Philadelphia, PA.
3. Chapters 1-7, 9-15 of *Applied Biopharmaceutics & Pharmacokinetics, 4<sup>th</sup> Edition*. Shargel L, Yu A, 1999; McGraw Hill, NY.
4. The protocol and clinical study report for a phase 1 clinical study, a phase 2 study, and a phase 3 study.

Review the following:

5. Most current *CFR/ICH Reference Guide*. Barnett Educational Services, Media PA.

Approximately 60 hours. Applies to the fulfillment of learning objectives #1-10, 13.

**Activity 4: Research project**

*Preparation:* Thoroughly review the appropriate tables, listings, and graphs generated by the biostatistics group for a selected clinical study.

*Execution:* Explore with others potential interpretations of the safety, efficacy, and/or pharmacokinetic data. Draft a simple summary report ( $\leq 3$  pages) of these data using the following structure:

Methodology

Results (report safety, efficacy, and pharmacokinetics data separately)

Discussion (discuss safety, efficacy, and pharmacokinetics data separately)

Conclusions

*Presentation:* Present a short slide presentation ( $\leq 20$  slides) to a small group based upon the summary report that was prepared.

Approximately 130 hours. Applies to the fulfillment of learning objectives #11-12.

This course is designed to assist students in achieving activities listed in ACPE's Accreditation Standards and Guidelines 2007.

**Notes:**

1. The student will be assigned an on-site work cube and computer that they can use the entire session.
2. The curriculum for this clerkship is, in fact, modestly difficult and will require genuine interest, motivation, and above average intelligence.

**Anticoagulation Service - PCTH 7550**  
**Learning Objectives**

**Goal 1: Design, recommend, monitor, and evaluate patient-specific anticoagulation therapeutic regimens that incorporate the principles of evidence-based medicine.**

**Goal 1A: Build the information base needed to design a medication therapy regimen.**

1. **Objective:** (Analysis) Collect and organize all patient-specific anticoagulation-related information needed by the pharmacist to prevent, detect, and resolve medication-related problems and to make appropriate medication therapy recommendations.
  - a) *(Comprehension) Identify the types of information the pharmacist requires to prevent, detect, and resolve anticoagulation medication-related problems and to make appropriate medication therapy recommendations.*
  - b) *(Comprehension) Explain signs and symptoms, epidemiology, risk factors, pathogenesis, natural history of disease, pathophysiology, clinical course, etiology, and treatment of diseases commonly encountered requiring anticoagulation therapy.*
  - c) *(Comprehension) Explain the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacoeconomics, usual regimen (dose, schedule, form, route, and method of administration), indications, contraindications, interactions, adverse reactions, and therapeutics of anticoagulation medications.*
  - d) *(Application) Use standard patient medical charts, records and/or electronic information to collect information that may be pertinent to prevent, detect, and resolve anticoagulation medication-related problems and to make informed medication therapy recommendations.*
  - e) *(Synthesis) Integrate effective communication techniques in interviews with patients, caregivers, health care professionals, or others so that the patient-specific information needed by the pharmacist is collected.*
  - f) *(Synthesis) Use an interview strategy that elicits maximum pertinent information when presented with a limited time frame (e.g., anticoagulation clinic office visit.)*
  - g) *(Complex Overt Response) When appropriate, measure patient vital signs and use appropriate physical assessment skills.*
  - h) *(Application) Record required patient-specific information in a manner that facilitates detecting and resolving anticoagulation medication-related problems and making appropriate medication therapy recommendations.*
2. **Objective:** (Analysis) Determine the presence of any of the following medication therapy problems with regard to a patient's current anticoagulation therapy:
  - anticoagulation medication prescribed inappropriately for a particular medical condition
  - current medication therapy regimen contains something inappropriate (dose, dosage form, duration, schedule, route of administration, method of administration)
  - there are adverse drug or device-related events or potential for such events
  - there are clinically significant drug-drug, drug-disease, drug-nutrient, drug-vitamin, or drug-laboratory test interactions or potential for such interactions
  - medical therapy has been interfered with by social, recreational, nonprescription, or nontraditional drug use by the patient or others
  - there are problems arising from the financial impact of medication therapy on the patient
  - patient lacks understanding of medication therapy
  - patient not adhering to medication regimen
  - a) *(Comprehension) Explain factors to consider when comparing the benefits and risks of warfarin therapy.*
  - b) *(Comprehension) Assess criteria for assessing the severity of an adverse drug reaction related to anticoagulation therapy.*

- c) *(Comprehension) Explain acceptable approaches to the therapeutic management of an adverse drug reaction.*
3. **Objective:** (Analysis) Using an organized collection of patient-specific information, summarize/analyze patients' anticoagulation needs.

**Goal 1B: Design therapeutic anticoagulation regimens and monitoring plans that incorporate the principles of evidence-based medicine.**

1. **Objective:** (Synthesis) Specify anticoagulation therapeutic goals for a patient incorporating the principles of evidence-based medicine that integrate patient-specific data, disease and medication-specific information, ethics, and quality-of-life considerations.
- a) *(Comprehension) Explain the importance of considering the patient's perception of desirable outcomes & quality of life when setting therapeutic goals for a patient with functional limitations.*
- b) *(Comprehension) Explain ethical issues that may need consideration when setting therapeutic goals.*
- c) *(Comprehension) Compare and contrast the realistic limits of treatment outcomes among the various care settings.*
- d) *(Comprehension) Explain how a patient's age or mental status might affect the setting of therapeutic goals.*
2. **Objective:** (Synthesis) Design an anticoagulation regimen and monitoring plan that meets the evidence-based therapeutic goals established for a patient; integrates patient-specific information, disease and drug information, ethical issues and quality-of-life issues; and considers pharmacoeconomic principles.
- a) *(Comprehension) Explain additional concerns with compliance, cost, and route of administration when making decisions on anticoagulation medication regimens.*
- b) *(Comprehension) Explain the use of anticoagulation treatment guidelines in the design of patient-specific therapeutic regimens (e.g. ACCP Consensus Conference Guidelines).*
- c) *(Analysis) Determine monitoring parameters that will measure achievement of goals or toxicity for an anticoagulation therapeutic regimen.*
- d) *(Synthesis) Define desirable INR range or anti-Xa level, taking into account patient-specific information & treatment guidelines.*

**Goal 1C: When required by the anticoagulation therapeutic regimen and monitoring plan, provide patient-specific and caregiver-specific education.**

1. **Objective:** *(Application) Use effective patient education techniques to provide counseling to patients and caregivers, including information on anticoagulation medication therapy, adverse effects, compliance, appropriate use, handling, and medication administration.*

**Goal 1D: Recommend or communicate anticoagulation therapeutic regimens and corresponding monitoring plans.**

1. **Objective:** (Application) Communicate an anticoagulation therapeutic regimen and corresponding monitoring plan to patients (and prescribers when applicable) in a way that is systematic, logical, and secures consensus from the patient (and prescriber).
- a) *(Comprehension) Explain how the established collaborative relationship between the pharmacist and prescriber supplants the task of recommending the regimen and corresponding monitoring plan to the prescriber.*
- b) *(Evaluation) Determine instances in which there is urgency in communicating the results of monitoring to the prescriber.*

**Goal 1E: Implement the monitoring plan.**

1. **Objective:** (Application) When appropriate, order tests required by the patient's monitoring plan according to the health system's policies and procedures.

**Goal 1F: Redesign therapeutic regimens and corresponding monitoring plans based on evaluation of monitoring data.**

1. **Objective:** (Evaluation) Accurately assess the patient's progress toward the therapeutic anticoagulation goals.
- a) *(Analysis) Accurately interpret the meaning of each parameter measurement.*
- b) *(Synthesis) Redesign a therapeutic plan as necessary based on evaluation of monitoring data and therapeutic outcomes.*

**Goal 1G: Understand why it is important to collect outcome data on patients.**

1. **Objective:** (Comprehension) Explain the importance of collecting outcome data for anticoagulation therapy.

**Goal 1H: Use processes that help to ensure continuity of direct patient care across health care delivery systems.**

1. **Objective:** (Application) When given a patient who is transitioning from one health care setting to another, communicate pertinent pharmacotherapeutic information to the receiving health care professionals.

**Goal 2: Provide concise, applicable, comprehensive, and timely responses to requests for drug information from patients, health care providers, and the public.**

**Goal 3: Document direct patient-care activities appropriately.**

**Goal 4: Provide inservice education to physicians, nurses, and other practitioners.**

**Goal 5: Understand the pharmacy department's process for preventing medication misadventures and for identifying, assessing, and managing those that occur.**

1. **Objective:** (Analysis) Participate in the pharmacy department's ongoing process for tracking and trending medication errors and ADEs.



**Advanced Community Clerkship - PCTH 7601**  
**Learning Objectives**

**Content Overview:** This required clerkship will further familiarize the student with organizational relationships and structures; quality improvement/ patient safety initiatives; and management practices; and defining the pharmacy department's role in these areas. Students will continue to be involved with direct patient care activities as appropriate for the site.

**Course Objectives:** At the completion of this clerkship, the student will be able to:

1. Review prescriptions for appropriate drug, dose, dosage form, directions, drug interactions, and essential information.
  - A. Communicate to health care prescribers recommendations for appropriate dose, drug, dosage forms, and directions
  - B. Communicate to patients the appropriate information about medications and/or their disease state
2. Review the organizational structure of the pharmacy.
  - A. Describe the role of the director(s) and/or managers within the pharmacy department
  - B. Describe the roles of department supportive personnel
  - C. Describe how the organization's structure facilitates or hinders department services
3. Review policies and procedures as it relates to hiring and disciplining personnel.
  - A. List challenges to training and retaining personnel
  - B. Describe solving staffing problems
  - C. Describe promoting a collegial work environment
  - D. Attend staff meetings
4. Participate in discussions with management about pharmacy workload and financial performance
  - A. Describe the fiscal planning process
  - B. Describe the budgetary issues that pharmacies face
  - C. Develop a budget for the pharmacy, including in it sales, gross margin, labor, inventory, and net profit
  - D. Attend management planning meetings
5. Demonstrate the use of medication management systems, including storage, preparation, distribution, procurement and inventory control
6. Participate in the pharmacy's quality assurance/ medication safety/ patient safety initiative(s)
  - a. Describe the purpose, structure and process of such initiatives
  - b. Write an analysis of one project, including outcomes of the project
7. Participate in the design, development, marketing and reimbursement process for a new patient service
  - A. Write a business proposal for a new service including the feasibility, need, and marketing strategies for such service
  - B. Describe potential reimbursement processes and revenue
  - C. Present the proposal to the managers and staff

8. Discuss third party issues as they relate to the management of the pharmacy, including i) benefit design, ii) contracting, reimbursement rates, requirements, audits, iii) claims processing, iv) remittances and payments, v) utilization reporting, vi) factors that affect profitability
  
9. Discuss customer service issues including i) wait times, ii) pharmacy access and appearance, iii) and staff presentation and interactions
  
10. Discuss methods of business analysis including i) cost/benefit analysis, ii) return on investment, iii) trends and competitive forces, iv) insurance contracts and the effects on formulary restrictions, maximum allowable costs, average sales price, and co-pays.
  
11. Describe the applicable state and federal laws as they pertain to the pharmacy's policies and procedures

**Advanced Health-Systems Clerkship - PCTH 7602**  
**Learning Objectives**

**Content Overview:** To further familiarize the student with organizational relationships and structures; quality improvement/ patient safety initiatives; and management practices; and defining the pharmacy department's role in these areas. Students continue to be involved with direct patient care activities appropriate for the site.

**Course Objectives:** At the completion of this clerkship, the student will be able to:

1. Describe the organizational structure of the healthcare-system and the department of pharmacy services relating to the system
  - A. Describe the role of the director(s) and/or managers within the pharmacy department
  - B. Describe the roles of department supportive personnel
2. Review policies and procedures as they relate to hiring and disciplining personnel
  - A. List challenges to training and retaining personnel
  - B. Attend and/or lead a staff meeting
3. Participate in discussions with management about pharmacy workload and financial performance
  - A. Describe the fiscal planning process
  - B. Describe the budgetary issues that health-systems face
4. Discuss and analyze the use of medication management systems, including storage, preparation, distribution, procurement and inventory control
5. Participate in the health-system's medication safety/ patient safety initiative(s)
  - A. Describe the purpose, structure and process of such initiatives
  - B. Write an analysis of one project, including outcomes of the project, or
  - C. Perform medication reconciliations, or
  - D. Perform discharge patient counseling
6. Create and write up a plan to support a new patient care service. This may include any one of the following:
  - A. the feasibility and need of the service;
  - B. barriers to the service;
  - C. needed resources; or
  - D. potential benefits of the service
7. Participate in the health-system's quality improvement process through any one of the following:
  - A. Perform a financial analysis
  - B. Attend and present to the Pharmacy and Therapeutics meeting or other similar meeting
  - C. Develop a clinical drug guideline
  - D. Perform a drug use evaluation
8. Review policies and procedures related to the health-system's investigational drug studies program by any one of the following (where available):
  - A. Attend an institutional review board meeting
  - B. Describe the roles of the various members of the research team
  - C. Present a study protocol to the staff

D. Distinguish study designs, sponsor supported studies vs. investigator studies, and describe the investigational drug pharmacist's role in each type of study

9. Review policies and procedures for the management of medical emergencies through any one of the following:

- A. Attend mortality and morbidity meetings
- B. Participate with emergency department pharmacists
- C. Attend a cardiac arrest with the cardiac team pharmacist

10. Describe the applicable state and federal laws as they pertain to the health-system's policies and procedures.

**Home Health Care - PCTH 7603**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Describe the role of the pharmacist in home infusion therapy.
2. Manufacture IV admixtures, total parenteral nutrition formulas, and other parenteral preparations in compliance with the policies and procedures of the facility.
3. Select an infusion device for use during home parenteral therapy, given patient-specific factors.
4. Learn how to make purchasing decisions based on therapeutic, economic and qualitative considerations.
5. Describe and comply with quality control systems used in the facility.
6. Evaluate new patients for appropriateness of drug therapy for diagnosis, renal function, route of administration, compliance and psychosocial issues which impact drug therapy.
7. Monitor selected patients on an ongoing basis for outcome.
8. Research assigned drug information questions.
9. Actively participate in all clinical meetings.
10. Describe JCAHO standards (specific to pharmacy) for home health care.
11. Prepared and give at least one seminar or inservice to staff.

**Long Term Care - PCTH 7604**  
**Learning Objectives**

At the completion of this professional experience, the student should be able to:

1. Compare and contrast the consultant vs. distributive roles of the pharmacist in the long term care facility.
2. Explain the drug distribution process from the pharmacy to the long term care facility.
3. Describe the data processing requirements for a pharmacy that provides services to long term care facilities.
4. List several factors which impact the bidding process for long term care facility contracts.
5. Explain the standards of care (pertaining to pharmacy) for a long term care facility.
6. Identify the needs of nursing and administrative staff as they pertain to the provision of pharmaceutical services.
7. Describe the process of drug utilization review.
8. Evaluate patients for appropriateness of drug therapy for: indication, renal function, comorbid conditions, route of administration and dosage form.
9. Monitor patients for preventable drug-related problems and optimal therapeutic outcomes.
10. Research assigned drug information questions.
11. Actively participate in patient care, P & T and other designated meetings.
12. Prepare and present one seminar or inservice to staff.

**GRADING CRITERIA and EVALUATIONS**

**For**

**ADVANCED EXPERIENTIAL CLINICAL**

**CLERKSHIPS**

## GRADING GUIDELINE FOR ADVANCED PHARMACY PRACTICE EXPERIENCES

### General Information

Grading for all advanced experiences is determined by use of a rubric. This rubric provides a basis for assessing whether the student has met the skills necessary to practice in a specific practice setting and to calculate a score of achievement of these competencies. In general, a minimum score of "3.8" is required in all areas of the rubric as these are how a minimally competent pharmacist would be expected to be able to perform in practice.

The rubric serves two main purposes. First, it allows the faculty preceptor to assess the student's ability in various areas of clinical practice and provide suggestions for improvement. Second, it provides a quantitative mechanism upon which a decision can be made as to whether a student should receive a passing grade for the clerkship. It is important to understand that successful completion of the clerkship is based on skills, knowledge and behaviors.

### Grade/Point Scale

The grading rubric uses a *five-point grading scale*. An average of points received on the rubric will have the following grades:

<b>3.9 - 3.8</b>	<b>C+</b>
<b>4.0 - 4.1</b>	<b>B-</b>
<b>4.2 - 4.3</b>	<b>B</b>
<b>4.4</b>	<b>B+</b>
<b>4.5 - 4.6</b>	<b>A-</b>
<b>4.7 - 5.0</b>	<b>A</b>

Students who achieve less than 3.8 as an average will receive a grade less than C+. Students who receive less than C+ may be required to repeat the clerkship, as determined by the Scholastic Standards Committee.

### Use of the Grading Rubric

A first evaluation of progress will be performed at the end of the first three weeks of the professional experience by the faculty preceptor. The ratings that are given should be discussed with explanations in order that you understand which areas are areas of strength, and which areas need improvement in order to achieve a passing grade. *A minimum score of "3.8" is needed to pass the clerkship experience.* Therefore, it is extremely important that you ask for this initial evaluation early in the clerkship if there is not one forthcoming. It is expected you will meet the minimum competencies for **most** categories at the mid-point evaluation.

In the event that there are multiple areas of deficiency, plan to discuss with the faculty preceptor ways in which to improve. This is also an opportunity to re-direct the learning objectives and activities. If the faculty preceptor feels a need to address expectations and outcomes sooner than the three-week evaluation, expect to have evaluations performed either before the three week midpoint or more frequently.

A student who fails to meet the minimum standards after multiple remediation attempts may be pulled from the experience.

Some preceptors have site-specific learning objectives and evaluation forms. These will be discussed at the start of the experience with the student.



## **Final Written Evaluation**

A final written evaluation by the preceptor will be provided to the student at the conclusion of the experience. This written evaluation is to summarize the student's strengths and provide direction on the skills, knowledge, or behaviors that the student should continue to work on in future clerkships. The final written evaluation can be completed in RXpreceptor. **Please forward this information on to your next preceptor. It is to be used to discuss goals and objectives on your new practice experience.**

## **ASSESSMENT AND EVALUATION DEADLINES**

For EACH block, the following needs to be completed...

- **Initial Self-Assessment: Due Wed. of Week 2**
  - Discuss the following with your preceptor: APPE learning objectives, student expectations, site specific objectives, your own objectives for the experience.
  - Set weekly activities to assist in accomplishing the set objectives.
- **Final Self-Assessment: Due 1 week after completion**
- **Evaluation of Preceptor: Due 2 weeks after completion**
  - Without constructive comments, this evaluation will be considered incomplete. (*Don't worry, these are not viewable by the preceptor until the very end of the APPE year.*)
  - Your grade may be dropped ½ for every week it's late.
- **Student Evaluations by Preceptor: Due Weeks 3 & 6**
- Clerkships are graded with a letter grade (C+ or better to pass)
- Grades will remain *incomplete* until all requirements are complete for each block
  - If any of the above are incomplete at the time of graduation, you risk not graduating on time.

## **STUDENT SELF-ASSESSMENT OF SKILLS AND CLINICAL KNOWLEDGE**

### **Instructions**

Experiential education is a progressive learning process by which students build on foundational knowledge gained through didactic course work. Throughout the year, you will be exposed to various disease states, therapeutic issues and variety areas in pharmacy (see areas listed under "Knowledge..."). *It is important to note that students will gain moderate to extensive experience in some disease states, and little to no experience in others, since this ultimately depends on the type of practice sites where experiences have been completed.*

This self-assessment checklist allows the student to perform a self-assessment of their knowledge and experience at the start of the clerkship. This can aid in the structuring of learning opportunities throughout the year. *These scores are not related to competencies or grades.* At the end of the experience, a re-evaluation of your skills and knowledge allows you to document the progression of your educational experience with respect to skills and knowledge gained over the academic year.

### **At the start of the experience:**

- ❖ Students complete the Initial Self-Assessment in RXPreceptor™ on or before the start of the experience.

- ❖ A score of 1-5 should rank each area to indicate the student's own assessment of their skill level in that area. Students will also be expected to complete a list of weekly activities and learning objectives for the rotation. This information is expected to be shared with the preceptor at the start of the experience.
- ❖ Preceptors and the student will review the student's self-assessment at the start of the experience as a means of identifying educational needs that can be addressed during that clerkship.

**At the end of the experience:**

- ❖ Students again rate themselves in all areas. This serves as a means of documenting changes in skills and knowledge gained during the professional experience.
- ❖ Preceptors are expected to complete the Student Evaluation Form and Final Written Evaluation in RXPreceptor™.

## Student Self-Assessment of Skills and Clinical Knowledge

*\*This is to be completed in RXPreceptor™. This form is only to be used in extenuating and approved circumstances.*

**Dates:** \_\_\_\_\_ **Site:** \_\_\_\_\_

**Student Name:** \_\_\_\_\_ **Faculty Preceptor:** \_\_\_\_\_

**Student's Professional Goals (after graduation):** \_\_\_\_\_

**Instructions:** Students should rate their level of skill/knowledge in all areas before and after each experience using the scale below; areas may be left blank only in the **Post-Assessment** if there was no change in that area. *These scores are not related to competencies or grades, rather are intended for use by faculty preceptors in helping to tailor the clerkship to meet educational needs*

Assuming you have access to the usual resources, a score of "1" would indicate that you would need extensive direction in solving a problem related to that area. A score of "5" would indicate that, given ready access to the usual resources, you could work independently to solve problems related to that area.

- 1 = No experience/knowledge in this area; would require extensive assistance to function in this domain
- 2 = Minimal experience/knowledge in this area; would require substantial assistance to function in this domain
- 3 = Moderate experience/knowledge; would require moderate assistance to function in this domain
- 4 = Moderate experience/knowledge; would require minimal assistance to function in this domain
- 5 = Extensive experience/knowledge; would be able to function independently with little or no assistance

Core Skills/Issues	Pre-Experience Assessment	Post-Experience Assessment	Faculty Column Place a " " during clerkship <input type="checkbox"/>
Problem-solving skills			
Organizational skills			
Communication skills w/patients			
Communication skills w/health professionals			
Written communication skills			
Collecting and recording patient-specific data			
Drug Information – retrieval, assessing, interpretation, and presentation			
Identifying & assessing actual and potential drug-related problems			
Development of pharmaceutical care plans			
Measuring and documenting patient outcomes			
Educating patients regarding the appropriate use of drugs			
Educating health care professionals regarding the appropriate use of drugs			
Bioethical issues and ethical dilemmas			
Health promotion/screening (immunizations, cancer screening, glaucoma, etc.)			
Patient referral issues			
Professional issues specific to this practice site			

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Knowledge in Disease States or Practice Areas	Pre-Experience Assessment	Post-Experience Assessment	Faculty Column Place a “ ” during clerkship
Allergies			
Alzheimer’s Disease			
Anemias			
Anticoagulation			
Anxiety/Panic Disorders			
Arthritis			
Asthma/COPD			
Business/Management			
Cardiovascular Disease			
Cerebrovascular Disease			
Compounding			
Constipation/Diarrhea Therapies			
Contraceptive Methods/Issues & STDs			
Depression			
Dermatological Disease			
Diabetes			
Drug Distribution Systems			
Dyslipidemias			
Geriatrics			
GERD/PUD			
Glaucoma			
Gout			
Hematology/Oncology			
Herbal & Non-traditional Therapies			
Hormone Replacement Therapy			
Hypertension			
Infectious Disease			
Men’s Health Care Issues			
Neurological Diseases			
Nutrition			
Osteoporosis			
Otitis Media/Externa			
Pain Management			
Parkinson’s			
Pharmacokinetic Applications			
Pediatrics – acute care issues			
Pregnancy Issues			
Psychiatric Disorders			
Renal Failure (acute/chronic)			
Seizure Disorders			
Skin Care/Wound Management			
Sleep Disorders			
Thyroid Disease			
Toxicology			
Women’s Health Care Issues			
Other: 1) 2) 3)			

**STUDENT ACTIVITIES CALENDAR**

*\*This is to be completed in RXPreceptor™. This form is only to be used in extenuating and approved circumstances.*

**Student Name:** \_\_\_\_\_ **Faculty Preceptor:** \_\_\_\_\_

**Site Location:** \_\_\_\_\_ **Course name/ number:** \_\_\_\_\_

**Date Started:** \_\_\_\_\_ **Date Finished:** \_\_\_\_\_

Please list activities planned to accomplish the APPE learning objectives:

<b>Week</b>	<b>Activities</b>	<b>Hours</b>
<b>One</b>		
<b>Two</b>		
<b>Three</b>		
<b>Four</b>		
<b>Five</b>		
<b>Six</b>		

**Total Hours:** \_\_\_\_\_

**Student Name:** \_\_\_\_\_ **Faculty Preceptor:** \_\_\_\_\_

**Site Location:** \_\_\_\_\_ **Course name/ number:** \_\_\_\_\_

**Date Started:** \_\_\_\_\_ **Date Finished:** \_\_\_\_\_

**Student's Learning Objectives:**

- 1.
- 2.
- 3.
- 4.

**Activities that are planned to accomplish the above learning objectives:**

### University of Utah College of Pharmacy - Student Evaluation Form

*\*This is to be completed in RXPreceptor™. This form is only to be used in extenuating and approved circumstances.*

**PCTH Course #:** \_\_\_\_\_ **Course Title:** \_\_\_\_\_ **Preceptor(s):** \_\_\_\_\_

**Student Name:** \_\_\_\_\_ **Dates:** \_\_\_\_\_

#### Part I. General Knowledge Base (    %)

<i>Category of Student Performance</i>	<i>Mid-point Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Knowledge of Disease States			Major misconceptions of basic principles	Usually unable to explain basic principles	Able to explain basic principles	Able to explain principles & details in moderate depth with infrequent or rare assistance	Able to explain principles and details with sophistication and depth with no assistance; consistently performs above average
Knowledge of pharmacotherapy							
Data Collection (patient specific)			Consistently fails to obtain proper information from proper sources	Collects some data, but omits several basic details	Collects obvious data, but usually does not collect proper details	Usually collects obvious and detailed data from proper sources	Effectively obtains complete data for each problem using a variety of sources
Data Collection (Literature retrieval)							

Midpoint Comments:

<b>Part II. Problem solving skills ( %)</b>							
<i>Category of Student Performance</i>	<i>Mid Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Problem Identification			Unable to identify basic problems in a patient or situation	Usually unable to identify basic problems, unable to prioritize problems	Able to identify basic problems, usually able to prioritize problems	Usually able to identify the majority of problems; able to prioritize problems	Able to identify all active and inactive problems, correctly prioritize problems, and provide rationale
Pharmaceutical Care Plan			Plans do not reflect appropriate outcomes, proper interventions, or drug doses	Plans include proper interventions, but unable to explain rationale	Usually plans include proper interventions and dose; plans are not problem or patient specific	Plans include correct doses and are patient-specific; has difficulty providing alternative plans	Plans are include correct doses and are patient-specific; able to provide alternate plans with documentation from the literature
Monitoring for Beneficial Outcomes			Unable to state basic endpoints or outcomes	Correctly states basic endpoints or outcomes; unable to recommend proper monitoring parameters	Correctly states basic endpoints & outcomes; usually recommends proper monitoring parameters	Correctly states endpoint/outcomes; appropriately recommends monitoring for most therapy or intervention	Correctly states monitoring parameters, endpoints & outcomes; provides limitations of monitoring plan
Monitoring for Adverse Outcomes							
Integrating, Applying and Retaining New Information			Does not demonstrate the use or integration of new knowledge	Occasionally able to use basic elements of new knowledge	Able to use basic & some advanced elements of new knowledge	Able to use & integrate basic & some advanced elements of new knowledge	Able to explain, use, & integrate basic/advanced elements of new knowledge



Midpoint Comments:

**Part III. Professional Communication Skills (    %)**

<i>Category of Student Performance</i>	<i>Mid Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Professional Interactions			Does not talk to or acts independently of other health care providers	Occasionally observes but without actively communicate with other health care providers	Interacts with other health care providers when prompted	Interacts with other health care providers and shares information in a succinct and tactful manner	Actively participates and contributes to patient care activities; becomes an essential resource for providers
Verbal Presentation			Usually unprepared for presentations	Usually prepared but presents poorly cited or incorrect information	Presents correct & well-cited information; usually articulate	Presents well-cited topics, with correct information; well-articulated	Articulately presents correct, well-cited information with sophistication
Written Communication			Assignments late, illegible, & with grammatical, spelling, and organizational errors	Assignments done on time; but inarticulate, poorly-cited, or with some grammatical or spelling errors	Well-cited information; rare grammatical or spelling errors	Well-cited information with articulation; no writing errors	Critically presented, well-cited information with articulation, clarity, & insight.
Verbal Communication with Patients &/or others			Use of unclear language, incorrect terminology, or offensive tone	Impersonal & abrupt manner, but generally provides correct information	Maintains a good dialogue; occasional use of unclear or inappropriate terminology	Directs conversation, allows patient or client to easily provide & receive info	Uses clear & correct language; effective communication with each patient or client

Midpoint Comments:

**Part IV. Professional Attitudes and Behavior (     %)**

<i>Category of Student Performance</i>	<i>Mid-point Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Reliability			Failed to meet many deadlines or one unexcused absence or consistently tardy to patient care activities	Missed an important deadline or several activities not completed in a timely manner; occasionally tardy to patient care activities	Regularly attends all patient care activities and work consistently completed on time	Regularly attends all patient care activities and demonstrates significant advanced planning and/or completes some projects ahead of time	Consistently plans ahead, completes all assignments and projects in advance; motivates other students to work ahead
Motivation			Speaks & acts on request only, often refused to participate	No self-motivation, but completes work if directed by the preceptor	Sometimes motivated if need is obvious	Makes decisions independently, but acts only after consultation with preceptor	Consistently initiates activities; uses spare time wisely
Organization			Disorganized work habits, necessary information often missing	Occasionally unorganized and unprepared	Usually well-organized, occasionally unable to retrieve information	Well-organized, information easily retrievable	Completely organized, information readily retrievable

Midpoint Comments:

Preceptor Signature: \_\_\_\_\_

Student signature: \_\_\_\_\_

**Final Review**

Preceptor Signature: \_\_\_\_\_

Date \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date \_\_\_\_\_

**University of Utah Student Evaluation Form  
Advanced Community Clerkship – PCTH 7601**

*\*This is to be completed in RXPreceptor™. This form is only to be used in extenuating and approved circumstances.*

**Preceptor(s):** \_\_\_\_\_

**Student Name:** \_\_\_\_\_

**Dates:** \_\_\_\_\_

**Part I. General Knowledge Base (    %)**

<i>Category of Student Performance</i>	<i>Mid-point Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Knows the organizational structure of the pharmacy			Major misunderstanding of the basic organizational structure, process or procedures	Usually unable to explain basic organizational structure, process or procedures	Able to explain basic organizational structure, process or procedures	Able to explain organizational structure, process or procedures in moderate depth with infrequent assistance	Able to explain organizational structure, process or procedures with sophistication and depth with no or rare assistance
Knowledge of the prescription process & laws							
Knowledge of policies and procedures							
Demonstrate use of medication management systems							

Midpoint Comments:

<b>Part II. Problem solving skills ( %)</b>							
<i>Category of Student Performance</i>	<i>Mid Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Identify a medication safety or quality initiative			Unable to identify safety initiatives in the organization	Usually unable to identify safety initiatives and describe the purpose of the initiatives	Usually able to identify safety initiatives and describe purpose and structure	Usually able to identify the majority of safety initiatives; able to describe, purpose, structure and process	Able to identify all active safety initiatives; performs an analysis of one including outcomes
Identify and design a new patient service			New service does not reflect the need or feasibility of the organization	New service addresses appropriate needs and feasibility, but unable to explain marketing strategies	New service addresses appropriate needs and feasibility; includes appropriate marketing strategies	Identifies potential reimbursement processes and revenues for new patient service	Succinctly presents new patient service to key stakeholders, discusses potential reimbursement revenues and marketing strategies
Perform a business analysis			Unable to discuss methods of business analysis	Usually unable to identify methods of business analysis	Able to identify methods of business analysis and is able to discuss some benefits and risks of each	Able to identify methods of business analysis and is able to relate some to the issues of the organization	Able to perform a business analysis of the with an identified method
Integrating, Applying and Retaining New Information			Does not demonstrate the use or integration of new knowledge	Occasionally able to use basic elements of new knowledge	Able to use basic & some advanced elements of new knowledge	Able to use & integrate basic & some advanced elements of new knowledge	Able to explain, use, & integrate basic/advanced elements of new knowledge
<u>Midpoint Comments:</u>							

**Part III. Professional Communication Skills ( %)**

<i>Category of Student Performance</i>	<i>Mid Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Professional Interactions			Does not talk to or acts independently of other health care providers	Occasionally observes but without actively communicate with other health care providers	Interacts with other health care providers when prompted	Interacts with other health care providers and shares information in a succinct and tactful manner	Actively participates and contributes to patient care activities; becomes an essential resource for providers
Verbal Presentation			Usually unprepared for presentations	Usually prepared but presents poorly cited or incorrect information	Presents correct & well-cited information; usually articulate	Presents well-cited topics, with correct information; well-articulated	Articulate presents correct, well-cited information with sophistication
Written Communication			Assignments late, illegible, & with grammatical, spelling, and organizational errors	Assignments done on time; but inarticulate, poorly-cited, or with some grammatical or spelling errors	Well-cited information; rare grammatical or spelling errors	Well-cited information with articulation; no writing errors	Critically presented, well-cited information with articulation, clarity, & insight.
Verbal Communication with Patients &/or others			Use of unclear language, incorrect terminology, or offensive tone	Impersonal & abrupt manner, but generally provides correct information	Maintains a good dialogue; occasional use of unclear or inappropriate terminology	Directs conversation, allows patient or client to easily provide & receive info	Uses clear & correct language; effective communication with each patient or client

Midpoint Comments:

**Part IV. Professional Attitudes and Behavior ( %)**

<i>Category of Student</i>	<i>Mid-point</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above</i>	<i>5. Outstanding / Exceeds Expectations</i>
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<i>Performance</i>	<i>Score</i>			<i>Expectations</i>		<i>Expectations</i>	
Reliability			Failed to meet many deadlines or one unexcused absence or consistently tardy to patient care activities	Missed an important deadline or several activities not completed in a timely manner; occasionally tardy to patient care activities	Regularly attends all patient care activities and work consistently completed on time	Regularly attends all patient care activities and demonstrates significant advanced planning and/or completes some projects ahead of time	Consistently plans ahead, completes all assignments and projects in advance; motivates other students to work ahead
Motivation			Speaks & acts on request only, often refused to participate	No self-motivation, but completes work if directed by the preceptor	Sometimes motivated if need is obvious	Makes decisions independently, but acts only after consultation with preceptor	Consistently initiates activities; uses spare time wisely
Organization			Disorganized work habits, necessary information often missing	Occasionally unorganized and unprepared	Usually well-organized, occasionally unable to retrieve information	Well-organized, information easily retrievable	Completely organized, information readily retrievable

Midpoint comments:

Preceptor signature: \_\_\_\_\_

Student signature: \_\_\_\_\_

**Final Review:**

Preceptor Signature: \_\_\_\_\_

Date \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date \_\_\_\_\_

**University of Utah Student Evaluation Form  
Advanced Health-Systems Clerkship– PCTH 7602**

*\*This is to be completed in RXPreceptor™. This form is only to be used in extenuating and approved circumstances.*

**Preceptor(s):** \_\_\_\_\_

**Student Name:** \_\_\_\_\_

**Dates:** \_\_\_\_\_

**Part I. General Knowledge Base (    %)**

<i>Category of Student Performance</i>	<i>Mid-point Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Knows the organizational structure of the pharmacy			Major misunderstanding of the basic organizational structure, process or procedures	Usually unable to explain basic organizational structure, process or procedures	Able to explain basic organizational structure, process or procedures	Able to explain organizational structure, process or procedures in moderate depth with infrequent assistance	Able to explain organizational structure, process or procedures with sophistication and depth with no or rare assistance
Knowledge of the prescription process & laws							
Knowledge of policies and procedures							
Demonstrate use of medication management systems							

Midpoint Comments:

**Part II. Problem solving skills ( %)**

<i>Category of Student Performance</i>	<i>Mid Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Identify a medication safety or quality initiative			Unable to identify safety initiatives in the organization	Usually unable to identify safety initiatives and describe the purpose of the initiatives	Usually able to identify safety initiatives and describe purpose and structure	Usually able to identify the majority of safety initiatives; able to describe, purpose, structure and process	Able to identify all active safety initiatives; performs an analysis of one including outcomes
Identify and design a new patient service			New service does not reflect the need or feasibility of the organization	New service addresses appropriate needs and feasibility, but unable to explain marketing strategies	New service addresses appropriate needs and feasibility; includes appropriate marketing strategies	Identifies potential reimbursement processes and revenues for new patient service	Succinctly presents new patient service to key stakeholders, discusses potential reimbursement revenues and marketing strategies
Identify and perform a quality improvement project			Unable to discuss quality improvement initiatives of the organization	Usually unable to identify quality improvement initiatives of the organization	Able to identify quality improvement initiatives of the organization and discuss some of the benefits of each	Able to identify quality improvement initiatives of the organization and design/ attend/ present to staff	Able to perform an analysis of the quality improvement initiative and discuss future initiatives with staff
Integrating, Applying and Retaining New Information			Does not demonstrate the use or integration of new knowledge	Occasionally able to use basic elements of new knowledge	Able to use basic & some advanced elements of new knowledge	Able to use & integrate basic & some advanced elements of new knowledge	Able to explain, use, & integrate basic/advanced elements of new knowledge



Midpoint Comments:

**Part III. Professional Communication Skills (     %)**

<i>Category of Student Performance</i>	<i>Mid Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Professional Interactions			Does not talk to or acts independently of other health care providers	Occasionally observes but without actively communicate with other health care providers	Interacts with other health care providers when prompted	Interacts with other health care providers and shares information in a succinct and tactful manner	Actively participates and contributes to patient care activities; becomes an essential resource for providers
Verbal Presentation			Usually unprepared for presentations	Usually prepared but presents poorly cited or incorrect information	Presents correct & well-cited information; usually articulate	Presents well-cited topics, with correct information; well-articulated	Articulately presents correct, well-cited information with sophistication
Written Communication			Assignments late, illegible, & with grammatical, spelling, and organizational errors	Assignments done on time; but inarticulate, poorly-cited, or with some grammatical or spelling errors	Well-cited information; rare grammatical or spelling errors	Well-cited information with articulation; no writing errors	Critically presented, well-cited information with articulation, clarity, & insight.
Verbal Communication with Patients &/or others			Use of unclear language, incorrect terminology, or offensive tone	Impersonal & abrupt manner, but generally provides correct information	Maintains a good dialogue; occasional use of unclear or inappropriate terminology	Directs conversation, allows patient or client to easily provide & receive info	Uses clear & correct language; effective communication with each patient or client

Midpoint Comments:

<b>Part IV. Professional Attitudes and Behavior ( %)</b>							
<i>Category of Student Performance</i>	<i>Mid-point Score</i>	<i>Final Score</i>	<i>1. Performs at an Unacceptable Level</i>	<i>2. Below Average / Performs Below Minimal Expectations</i>	<i>3. Average / Meets the Minimal Expectations</i>	<i>4. Above Average / Performs Above Expectations</i>	<i>5. Outstanding / Exceeds Expectations</i>
Reliability			Failed to meet many deadlines or one unexcused absence or consistently tardy to patient care activities	Missed an important deadline or several activities not completed in a timely manner; occasionally tardy to patient care activities	Regularly attends all patient care activities and work consistently completed on time	Regularly attends all patient care activities and demonstrates significant advanced planning and/or completes some projects ahead of time	Consistently plans ahead, completes all assignments and projects in advance; motivates other students to work ahead
Motivation			Speaks & acts on request only, often refused to participate	No self-motivation, but completes work if directed by the preceptor	Sometimes motivated if need is obvious	Makes decisions independently, but acts only after consultation with preceptor	Consistently initiates activities; uses spare time wisely
Organization			Disorganized work habits, necessary information often missing	Occasionally unorganized and unprepared	Usually well-organized, occasionally unable to retrieve information	Well-organized, information easily retrievable	Completely organized, information readily retrievable
<u>Midpoint Comments:</u>							
Preceptor signature: _____ Student signature: _____							

**Final Review:**

Preceptor Signature: \_\_\_\_\_

Date \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date \_\_\_\_\_

**Written Evaluation**

*(To be completed with final evaluation)*

*\*This is to be completed in RXPreceptor™. This form is only to be used in extenuating and approved circumstances.*

**Student name:** \_\_\_\_\_ **Dates:** \_\_\_\_\_

**Preceptor name:** \_\_\_\_\_ **Site:** \_\_\_\_\_

Student's strengths:

Goals/objectives to work on: (Note: to be used for learning objectives at your next experience)

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**DOCTOR OF PHARMACY ADVANCED PHARMACY PRACTICE EXPERIENCE**

**FINAL GRADE SHEET**

(Please use ink and complete all sections)

*\*This is to be completed in RXPreceptor™. This form is only to be used in extenuating and approved circumstances.*

Student: \_\_\_\_\_ Dates: \_\_\_\_\_

PCTH \_\_\_\_\_ (Course Number) Course Title: \_\_\_\_\_

Faculty/Preceptor(s): \_\_\_\_\_ (Please print)

Site: \_\_\_\_\_ (Please print)

**Final Letter Grade:** \_\_\_\_\_

I hereby certify that \_\_\_\_\_ has completed 240 hours of an advanced  
pharmacy practice experience.

Faculty signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **REFLECTIVE LEARNING PORTFOLIOS**

Reflective learning portfolios are defined as collection of evidence that attests to the student's attainment of knowledge, skills and attitudes. This attainment is tied to specific learning outcomes of the program. By including self-reflection and self-assessment by the student as part of the portfolio process, students are more able to develop critical thinking skills. However, this process works better by external prompting, than by internal.

Students will put together a one page document that presents a "snapshot" of where they are in their learning journey and where they expect to go with their future learning. The portfolio should be 300 – 500 words in length and can be done using any Microsoft word processing or presentation program. You may select any background/colors/ design that you wish. **Use only black colored text for the boxes; you may use any color for the titles. Please try to stay away from cursive fonts.**

The first portfolio will be your baseline of where you are at the beginning of your clerkships, what your goals are, what you hope to accomplish. As the year progresses, with your second portfolio, you will re-address your goals; evaluate what you have accomplished; what has changed with your skill level and why this is important to you. The last portfolio will be a summary of all your learning thus far, where you plan to focus your learning in the next year, how will you use what you have learned so far.

### **First Portfolio – Due September 14, 2015**

Please include **your Name, title, and date on the portfolio. It should have the following components to it:**

#### **1. Introduction**

Write a short reflection on the past three years; what has changed since you started pharmacy school; and what are your current goals are for your career.

#### **2. Learning Outcomes Snapshot**

Students are to select three learning outcomes from the program for inclusion and discussion into the portfolio. Students need to describe their rationale for inclusion (why were these important to you?). This should also discuss the experiences that that you have had this semester that you felt contributed to you achieving (or not) the learning outcomes.

#### **3. Evidence**

Briefly describe the evidence that supports your achievement of the learning outcomes. This may be a brief description of the evidence, pictures/ photos; however, the experience needs to be personal. It does not include test scores or projects from the experience. Evidence included should be thoughtful and representative of the profession and its' standards.

#### **4. Reflections**

Write a brief (100 words) description of your experiential education so far, including what has worked well for you so far and what hasn't. There should be some thought on how each piece of evidence you have included is representative of you achieving the learning outcomes. Discuss how this will be important to you as you progress through the program and your future career. This is not a report of what you did, but a sharing of what you learned that will change the way that you practice or see how the profession will be for you in your career.

## **Second Portfolio – Due January 18, 2016**

Please include **your Name, title, and date on the portfolio. It should have the following components to it:**

### **1. Introduction**

What has changed regarding your goals, your skill level, knowledge base, and attitude about the profession? Why are these important to you? Where are you in your learning journey?

### **2. Learning Outcomes Snapshot – new learning outcomes that you have achieved**

**3. Evidence** – Same as with the first portfolio.

**4. Reflections** – Same as with the first portfolio.

## **Third Portfolio – Due April 11, 2016**

Please include **your Name, title, and date on the portfolio. It should have the following components to it:**

### **1. Summary**

A review of the important concepts learned. What were some particular challenges you faced? How have your goals, interests and motivations changed? What have you discovered about yourself? What are your future learning outcomes?

### **2. Learning Outcomes Snapshot**

Provide a list of some of the most significant learned concepts.

**3. Evidence** - Same as with the first portfolio

**4. Reflections** – Summarize your past year. What would you have done differently, if anything? What are your next steps for your career? How will you plan on continuing your professional development?

### Case Presentation Evaluation (optional)

Student Name: \_\_\_\_\_ Evaluator: \_\_\_\_\_

Critique	Points	Comments
<b>Patient Presentation</b>		
Able to articulate verbally, usually proper medical terminology	/10	
<b>Disease States</b>		
Discussion of disease state in relation to patient case	/10	
Discussion of diagnostic parameters	/10	
Pertinent findings included	/10	
Appropriate assessment made	/10	
<b>Therapy Recommendations</b>		
Discussion of non-drug treatments	/10	
Current regimen evaluated with appropriate recommendation for disease/problem with rationale included	/10	
Alternative therapy recommended	/10	
<b>Monitoring</b>		
Appropriate monitoring for efficacy with goal parameters stated	/10	
Appropriate monitoring for safety with goal parameters stated	/10	

**Total Points:        /100**

### In-service Evaluation (Optional)

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Evaluator: \_\_\_\_\_ Topic: \_\_\_\_\_

	<b>Points Possible</b>	<b>Points Received</b>	<b>Comments</b>
Introduction	5		
Presentation Organization	10		
Presentation Style	10		
Instructional Materials	15		
Content	15		
Emphasis of Key Points/	15		
Conclusions and Summary	10		
Response to Questions	15		
Reference List	5		
<b>Total Points</b>	<b>100</b>		
<b>Percentage</b>			

**General Remarks:**



# APPENDIX

## Appendix A

### SITE-SPECIFIC PAPERWORK REQUIREMENTS

In addition to the minimum clerkship requirements, the following sites require:

#### UNIVERSITY OF UTAH HOSPITALS AND CLINICS

- 2015 Confidentiality Agreement
- Inpatient EPIC Training (*Hospitals*)
- Outpatient EPIC Training (*Clinics*)

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#### INTERMOUNTAIN HEALTHCARE (IHC)

- Drug Screen (SAM 5)
- Orientation Packet and Quiz
- ID Badge

✓ **Drug Screen**

Drug Screen: "SAM 5", Cost \$30.

WorkMed:

1685 W. 2200 South or 201 E. 5900 South

Phone: 801-972-8850 Phone: 801-288-4900

Please have the results of the drug screen sent to:

PEP Coordinator

U of U College of Pharmacy

30 South 2000 East rm 201

Salt Lake City, UT 84122

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#### ST. MARK'S HOSPITAL

- Drug Screen (SAM 10)
- Profile Form
- Read Student Orientation Booklet & complete the Post Test
- Confidentiality and Security Agreement
- Dress Code Policy

✓ **Drug Screen**

Drug Screen: "SAM 10", Cost \$50.

WorkMed:

1685 W. 2200 South or 201 E. 5900 South

Phone: 801-972-8850 Phone: 801-288-4900

Please have the results of the drug screen sent to:

PEP Coordinator  
U of U College of Pharmacy  
30 South 2000 East rm 201  
Salt Lake City, UT 84122

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#### **SALT LAKE CITY VETERAN'S ADMINISTRATION HEALTH CARE SYSTEM**

- Orientation Packet (including Online Training & Completion Certificates)
  - Fingerprints
  - ID Badge
  - Computer System Training ( 1 hr)
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#### **UNIVERSITY NEUROPSYCHIATRIC INSTITUTE**

- Contact Mary Lou Hamill (801-587-3198) two weeks before starting clerkship for a background check. They will set it up and pay for it.
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#### **HEALTHSOUTH REHAB HOSPITAL**

- Contact Human Resources Manager: 801-565- 6583 at least two weeks before starting the clerkship for a background check and a drug screen. They will set it up and pay for it. If you had a background check and drug screen less than a year ago, you do not need to repeat it.
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#### **HILL AIR FORCE BASE**

- Note: This site does not accept permanent residents or international students. The student must be an American Citizen.
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#### **OUTSIDE STATE of UTAH CLERKSHIPS**

- **Professional Liability Insurance:** Insurance may be purchased through whichever organization that you choose. You may contact HPSO (Health Providers Service Organization) 1-800-982-9491 or [www.hpso.com](http://www.hpso.com) for coverage if you wish.