UC San Diego

SKAGGS SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES

Advanced Pharmacy Practice Experience (APPE)
Hospital/Health-System

SPPS 403

Office of Experiential Education (OEE)

Christina Mnatzaganian, PharmD
Associate Dean for Experiential Education
cmnatzaganian@health.ucsd.edu
(858)822-5642

Ila Saunders, PharmD
Director, APPEs
Isaunders@health.ucsd.edu
(858) 822-6839

Karla Barranco Marquez
Coordinator, APPEs
kbarrancomarquez@health.ucsd.edu
(858)822-5503

I. Course Description: SPPS 403 (8 units)

SPPS 403 is a six-week, supervised core APPE in a hospital/health-system. This experience provides opportunities to apply students' acquired knowledge and skills to the range of professional services and activities expected in a hospital of integrated pharmaceutical services. Through observation and practice, students will develop and explore their role in the various pharmaceutical operational initiatives that support the clinical services designed to care for the patient.

The student will learn the functions of various personnel (i.e. hospital pharmacy technicians and pharmacists) which may include experiencing the roles of pharmacists in central distribution, decentralized clinical services, transitions of care activities, investigational drug services, pharmacy administration, and more. Additionally, the student will learn and work with different technologies in pharmacy practice, such as order entry and verification, automated dispensing cabinets, high density storage devices, barcode medication identification technology, and the electronic healthcare record. Students will gain experience in the preparation of parenteral medications, drug distribution, and practice management-related activities as well as decision-making and drug information activities.

Through this hands-on experiential rotation, an individual will progress from the student pharmacist level to being accountable for pharmacist-delivered, patient-centered care. Finally, in working with many different levels of personnel throughout the rotation, the student will understand the importance of relationship development, effective communication, and networking.

Students should refer to the Office of Experiential Education section on the Resources tab of Canvas and Core ELMS for specific Rotation Descriptions and additional resources.

Students are expected to adhere to all Policies and Guidelines at SSPPS.

II. Prerequisites

Students must:

A. Have successfully completed didactic pharmacy curriculum years 1-3.
B. Have successfully completed all Introductory Pharmacy Practice Experience (IPPE) requirements.
C. Meet eligibility requirements to progress to APPEs per SSPPS Progression Policy.
D. Meet expectations of professionalism as stated in the SSPPS Guidelines on the Evaluation of Professionalism.
E. Have received a passing score on the Comprehensive Cumulative exam.
F. Have a valid and active pharmacy intern license.
G. Have up-to-date immunization records and have received HIPAA training.
H. Have requisite training/certifications necessary for the given activity as well as all required components set by the practice site.

III. Course Goals

Students will interact with a number of different healthcare providers and participate in a variety of patient-centered care activities within the hospital/health-system environment. The student will be provided with many opportunities to apply academic basic science and clinical didactic course work, as well as their Introductory Pharmacy Practice Experiences in this setting.

IV. Course Objectives, Activities and Link to PPCP[1]

Course Objectives	Example Learning Activities	PPCP
1. Demonstrate ethical and professional behavior in all practice areas.	• Demonstrate ethical and professional behavior in all practice activities. • Adhere to patient privacy standards and ethical principes, in verbal and written communications. • Demonstrate an attitude that is respectful of diverse individuals, groups, cultures, and communities. • Demonstrate appropriate attire, demeanor, and conduct. • Adhere to attendance requirements, including punctuality.	n/a
2. Demonstrate appropriate depth and breadth of pharmacotherapeutics and disease-related knowledge for a variety of common conditions seen in patients in the hospital practice setting.	• Participate in and/or lead topic discussions. • Apply the PPCP to every patient assigned by the preceptor, essentially independently, and present to the preceptor. • For those medical problems and drugs which were not covered in the didactic curriculum, be able to efficiently locate appropriate literature resources.	n/a
3. Collect information necessary to identify and diagnose a patient's medication-related problems and health-related needs. (EPA 1)	• Collect objective information from the patient (e.g., physical exam, point of care testing). • Collect data from a patient's electronic health, digital health, or medication record.	Collect

4. Assess collected information to determine a patient's medication-related problems and health-related needs. (EPA 2)	• Assess the indication of the medication treatment plan. • Assess the safety of the medication treatment plan including drug interactions. • Assess the effectiveness of medication treatment plans, including existing, previous, and new medications. • Assess the relative priority of each health-related need of the patient to create a prioritized problem list.	Assess
5. Answer medication related questions using scientific literature. (EPA 5)	• Ask clarifying questions to identify and address the true question. • Perform a systematic search of tertiary, secondary, and primary resources. • Identify and retrieve high-quality scientific literature. • Analyze scientific literature. • Provide a written or verbal response to the true question, including findings and recommendations.	Plan
6. Implement and prescribe a care plan in collaboration with the patient, others trusted by the patient, and other health professionals. (EPA 6)	• Initiate, modify, or discontinue medication therapy. • Present necessary information to a colleague during a handoff or transition of care. • Document the findings, recommendations, plan, and pharmacy services provided.	Implement

7. Fulfill a medication order. (EPA 7)	• Enter an order or prescription into an electronic health or pharmacy record system. • Perform calculations required to compound, dispense, and administer medications. • Perform a prospective drug utilization review. • Identify and manage drug therapy problems. • Consider formulary preferred medications when making recommendations. • Complete an authorization process for a non-preferred medication. • Assist a patient to acquire medication(s) through support programs. • Prepare non-sterile and/or sterile medications. • Perform a quality assurance check on prepared medications prior to dispensing. • Dispense and administer a product including injectable medications and immunizations. • Adhere to state and federal laws/regulations and site quality and safety procedures	Implement
8. Report adverse drug events and/or medication errors in accordance with site specific procedures (EPA 10)	• Identify factors of system(s) (e.g., personnel, infrastructure, interfaces) associated with errors or risk of errors. • Determine points of intervention within system(s) to prevent or minimize medication-related errors.	Follow up: Monitor and evaluate

	• Report and document adverse drug events and medication errors to stakeholders.	
9. Perform the technical, administrative, and supporting operations of a pharmacy practice site. (EPA 13)	• Fulfill medication orders appropriate to hospital practice including prescription verification, proper selection, preparation, compounding, labeling, storage, packaging, handling and disposal. • Identify and resolve drug-drug, drug-disease, and drug-nutrient/food interactions. • Utilize Controlled Substance Utilization, Review and Evaluation System (CURES), or equivalent prescription drug monitoring program (PDMP) to ensure appropriate dispensing of controlled substances. • Execute pharmacy policies and procedures. • Delegate work activities to pharmacy team members. • Provide formative feedback on pharmacy team dynamics, workflow, processes, and operations. • Manage pharmacy workflow to ensure efficiency and safety. • Use technology to support the pharmacy workflow. • Execute pharmacy quality improvement activities. • Procure inventory to ensure continued pharmacy operations. • Prepare for regulatory visits and inspections.	n/a

[1] *Course Goals, Objectives, and Activities Adapted from:*

- *Essential Elements for Core Required Advanced Pharmacy Practice Experiences.* Am J Pharm Educ. 2019 May; 83(4): 6865
- *Core entrustable professional activities for new pharmacy graduates.* Am J Pharm Educ. 2023 June; 87: 100562. https://doi.org/10.1016/j.ajpe.2023.100562

V. Evaluations

A. Grading will be Pass/Fail.
B. Three evaluations using the standardized Pharmacy Evaluation Form are required for this course:
   i. Mid-point Formative Evaluation: An online self-evaluation completed by the student and discussed with the preceptor. The preceptor will provide written and verbal comments and sign off.
   ii. Preceptor & Site Evaluation: Separate online evaluations completed by the student at the end of the rotation.
   iii. Summative Evaluation: An online evaluation completed by the preceptor at the end of the rotation and discussed with the student.

Students may be evaluated at any other time at the discretion of the preceptor. Preceptors may evaluate students more frequently, so that the student is informed of areas requiring improvement early in the rotation. The primary preceptor may obtain feedback from all team members as well as any patient comments.

Students **must** have submitted their Mid-point evaluations in addition to completing evaluations of their sites/preceptors to receive a grade for the experience.

VI. SSPPS Rotation Equity, Diversity and Inclusion Statement

Each rotation is a place to expand knowledge and experiences safely, while being respected and valued. We support the values of UC San Diego to "create a diverse, equitable, and inclusive campus in which students, faculty, and staff can thrive." It is our intent that students from all diverse backgrounds and perspectives be well served by this rotation, that students' learning needs be addressed, and that the diversity that students bring to this rotation be viewed as a resource, strength and benefit. It is our intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, religion, and culture. We ask that everyone engage in interactions with patients, caregivers and other members of the healthcare team with similar respect and courtesy. All people have the right to be addressed and referred to in accordance with their personal identity. We encourage everyone to share the name that they prefer to be called and, if they choose, to identify pronouns with which they would like to be addressed. We will do our best to address and refer to all students accordingly and support colleagues in doing so as well. We hope you will join us in creating a learning experience that upholds these values to further enhance our learning as a community.

VII. Use of Generative Artificial Intelligence (AI)

The use of generative AI tools in clinical or experiential settings is strictly regulated, and misuse can lead to serious consequences, including but not limited to violations of the Health Insurance Portability and Accountability Act (HIPAA) and causing harm to patients. Generative AI is to be used as an assistive tool and should never be used as a substitute for clinical or professional judgment.

SSPPS students are responsible for staying informed about and adhering to the guidelines for using approved generative AI tools at their practice sites. Students are advised to ask preceptors and/or site coordinators about each site's generative AI use policy during orientation to the practice site. In the absence of a generative AI use policy at the practice site, the use of such tools should be assumed to be prohibited.

VIII. Resources

A. SSPPS References: Students & Preceptors
B. UCSD Intranet Medication Resources ("Pulse")
C. Online Clinical Library Resources
    I. Clinical Pharmacology
    II. Micromedex
    III. DynaMed
    IV. Up to Date
    V. Natural Medicines
D. Suggested Textbooks (updated versions may be available)
    I. Trissel LA. Handbook on Injectable Drugs, 17th Edition. American Society of Health System Pharmacists. 2012.
    II. Alldredge, BK, Corelli RL, Ernst ME, Guglielmo BJ, Jacobson PA, Kradjan WA, Williams BR. *Koda-Kimble & Young's Applied Therapeutics: The Clinical Use of Drugs*, 10th ed., Lippincott Williams & Wilkins, 2012.
    III. DiPiro JT, Yee GC, Posey LM, Haines ST, Nolin TD, Ellingrod V, eds. *Pharmacotherapy: A Pathophysiologic Approach*, 11th edition. McGraw-Hill, New York, 2020.
    IV. Title 22 of the Code of Federal Regulations: Pharmaceutical Service General Requirements.
    V. California Pharmacy Law Book
E. The Pharmacists' Patient Care Process (PPCP) - See **Appendix 2** for blank PPCP template.
F. Journal Club Format: PIES Method of Critique
G. As specified per individual rotation site/preceptor.

Appendix 1

Student Presentation and/or Conference (example)

The student may be required, by the preceptor, to present a drug or disease related acute care topic. The presentation expectations will be guided by the preceptor, who is encouraged to provide specific and clear instructions to the student. An example of student presentation expectations is outlined below:

1. **Handout should include:**
    a. Topic of presentation.
    b. Student name, title, date of presentation.
    c. Goal (s) and objective (s) of the presentation.
    d. Outline of presentation.
    e. Reference list that utilizes primary literature, as appropriate.
2. **If the topic includes a patient case presentation, the student should include the following elements:**
    a. Reason for clinic visit and chief complaint.
    b. History of present illness.
    c. Past medical history.
    d. Medication history (Rx, OTC, allergies/ADRs, adherence).
    e. Summary of pertinent review of systems and physical examination.
    f. Pertinent labs.
    g. Assessment of response and appropriateness of current therapy:
        i. Evaluation of the rationale for its use.
        ii. Comparison of alternative therapies and therapeutic approaches which may be beneficial for the problem in question (this will include a comparison of efficacy, adverse reactions, toxicity and relative advantages and disadvantages of each therapy).
        iii. Discussion of recent developments and/or controversies on the topic or drug presented and a critical evaluation of literature reviewed.
    h. Therapeutic plan.
    i. Therapeutic considerations:
        i. Discussion of pertinent pharmaceutical considerations (dosage form, stability, cost, insurance coverage, ease of use by the patient, dexterity issues, etc.).
    j. Monitoring parameters.
    k. Planned follow-up.

Appendix 2 – Pharmacists' Patient Care Process (PPCP) Template

Patient Name:	**Age:**	**Race/Ethnicity:**	**Gender/Pronouns:**	**Wt:**

COLLECT: What data is relevant to assess the primary problem?	
Subjective	**CC (Chief Concern/Complaint):** reason for the visit or admission **HPI (S**ymptoms, **C**haracteristics, **H**istory, **O**nset, **L**ocation, **A**ggravating factors, **R**emitting factors): **Meds (Rx, OTC, herbal/supplements):** dose, route, frequency ± duration, indication, efficacy, ADEs, adherence **Allergies** and type of reaction: **Relevant PMH/FH:** **Relevant SH:** diet, exercise, alcohol, tobacco, recreational drugs, occupation, etc.
Objective	**Labs, vitals** (e.g., BP, HR, RR, temp, O2 sat, pain score)**, physical exam** (positive findings, Ht, Wt)**, procedures/imaging**

ASSESS		
Primary Problem		
Problem Status	**What needs to be done for the problem:** ☐ **Needs treatment** (e.g., chronic condition is uncontrolled, acute problem requires drug therapy) ☐ **Refer**	
Current Therapy ▪ Indicated? ▪ Effective? ▪ Safe?	▪ **Indicated?** Does the problem require drug therapy? Should current therapy be continued, changed or stopped? Why? ▪ **Effective?** What is the anticipated effect of current therapy (e.g., average A1c reduction)? Is the dose optimized (too high/low, appropriate for age, comorbidities, renal/liver function, convenient to take/administer, etc.) ▪ **Safe?** Any ADEs, DDIs or contraindications?	
	PROS: Identify patient-specific pros of current therapy ▪	**CONS:** Identify patient-specific cons of current therapy ▪
New Therapy ▪ Add-on? ▪ Alternative med?	**What other meds could be considered? What is the anticipated effect of new therapy? Will it achieve goals?**	
	PROS: Patient-specific pros of new drug/class	**CONS:** Patient-specific cons of new drug/class
New drug/class	▪	▪
New drug/class	▪	▪
New drug/class	▪	▪
New drug/class	▪	▪
New drug/class	▪	▪

PLAN / IMPLEMENT / FOLLOW-UP		
Treatment Goal(s)	Cure/reduce symptoms, correct lab/vitals, minimize/avoid ADE/DDI, prevent complications, reduce morbidity/mortality ▪	
Recommended Drug Therapy	▪ **Current therapy** (continue/increase/decrease/stop): ▪ **New drug therapy** (start)**:** Drug name(s), strength, dose, route, dosing frequency ± duration of therapy	
Non-Drug Therapy/ Preventative Care	Patient-specific lifestyle modifications (e.g., specific targets for diet, exercise, tobacco, alcohol, actions to do/avoid…) ▪	
Monitor/Follow-up ▪ What ▪ When ▪ Who ▪ How	**Efficacy monitoring** ▪ What monitoring (S/O) parameters will indicate if therapy is working? ▪ How often should parameters be checked? ▪ Next steps if goal(s) not achieved	**Toxicity/adverse effects monitoring** ▪ What monitoring (S/O) parameters will indicate if ADEs or toxicity is occurring? ▪ How often should monitoring occur? ▪ How would ADEs or toxicity be managed?
Patient Education (for selected plan) 3 Prime Questions Disease education ± **Coordinate Care** ± **Documentation**	▪ What the drug is for: indication/symptoms being treated, why the drug is needed/preferred for this patient ▪ How to take it: medication name(s), dose, frequency, duration, administration, how to optimize adherence ▪ **What to expect:** onset, common side effects and how to manage, potential drug interactions, missed doses, storage ▪ Lifestyle changes/non-drug therapy ▪ What needs to be done for follow-up (e.g., clinic/telehealth visit, phone call, labs, home monitoring), when, and with who ▪ ± Considerations for addressing medication access, SDOH (e.g., where/how to get med, cost, adherence barriers) ▪ ± Communicate plan to other providers (e.g., document in health record, phone call, provide written summary to patient)	