

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)

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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

III. Students must:

- A. Have successfully completed didactic pharmacy curriculum years 1-3.
- B. Meet eligibility requirements to progress to APPEs per SSPPS Progression Policy.
- C. Meet expectations of professionalism as stated in the SSPPS Guidelines on the Evaluation of Professionalism.
- D. Have successfully completed all Introductory Pharmacy Practice Experience (IPPE) requirements.
- 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 Domains, Objectives, and Activities¹

| | Specific Objectives | Example Learning Activities |
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| Domain 1: Dispensing System and Safety Management | | |
| Objective 1.1: Participate in the medication use process in a health-system. | 1.1.1 Accurately verify new medication orders. | <ul style="list-style-type: none"> For any given medication order, succinctly and accurately explain out loud all steps (e.g. legitimate prescription, appropriate dose, interactions, overlapping side effects, DUR) in the thought process needed for verification. |
| | 1.1.2 Ensure the accurate preparation of medication orders. | <ul style="list-style-type: none"> Oversees the preparation of the order, product choice, and delivery. Review non-formulary requirements and approval process for individual orders as they are presented. Navigate drug selection based on formulary options. |
| | 1.1.3 Respond appropriately to basic drug procurement issues using site protocols. | <ul style="list-style-type: none"> Appropriately respond to medication orders for which there are shortages. Follow the approval process for non-formulary medication orders, including what products are uniquely sourced, how a distributor is identified, and how to place an order for such a product. |
| | 1.1.4 Utilize information technology and medication management systems. | <ul style="list-style-type: none"> Use pharmacy computer systems. Use automated dispensing systems. Use controlled substances monitoring systems. Use medication administration and barcoding systems. |
| | 1.1.5 Perform IV admixture (where applicable/available, based on state and | <ul style="list-style-type: none"> Given a medication order for a parenteral product, determine the correct |

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| | institutional requirements). | <p>compounding technique and related administration instructions.</p> <ul style="list-style-type: none"> Given a new or unfamiliar IV product for which there are no order sets or standard admixture, identify the correct mixing. Technique/compounding, choice of diluent(s), packaging, labelling, infusion rate, concentration (central line versus peripheral), compatibility, expiration dating, and any requirements for safe administration. |
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| Domain 2: Practice Manager | | |
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| <p>Objective 2.1: Perform practice management in the health-system.</p> | <p>2.1.1 Oversee the pharmacy operations for an assigned work shift.</p> | <ul style="list-style-type: none"> For a reasonable amount of time, manage the workflow of the dispensing process, including answering phone calls, delegating tasks, checking batched and compounded medications, and other administrative tasks commonly performed by pharmacists in the central fill setting. Implement pharmacy policies and procedures. Supervise and coordinate the activities of pharmacy technicians and other support staff. Assist in training pharmacy technicians and other support staff. Assist in the evaluation of pharmacy technicians and other support staff. Identify pharmacy service problems and/or medication safety issues. Maintain the pharmacy inventory. Assist in the management of a pharmacy budget. Interpret pharmacy quality and productivity indicators using continuous improvement quality techniques. Assist in the preparation for regulatory visits and inspections. |

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| | 2.1.2 Participate in continuous quality improvement projects to assess and/or optimize the medication use process. | <ul style="list-style-type: none"> • Participate in reporting pharmacist interventions or other activities in the electronic medical records. • Participate in an exercise that measures, improves, or clarifies some aspect of pharmacy services quality or patient safety. • Active engagement in formulary decision making activities (e.g., prepare monograph, prepare presentation, etc.). • Participate in discussions and assignments regarding compliance with accreditation, legal, regulatory, and safety requirements. |
| | 2.1.3 Participate in institutional systems and programs to assure appropriate drug use. | <ul style="list-style-type: none"> • Conduct and document medication reconciliation. • Interview and document medication adherence. |

Domain 3: Population Health Promoter

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| Objective 3.1: Promote population health. | 3.1.1 Minimize adverse drug events and medication errors. | <ul style="list-style-type: none"> • Assist in the identification of underlying system-associated causes of errors. • Identify and report medication errors and adverse drug events. |
| | 3.1.2 Maximize the appropriate use of medications in populations. | <ul style="list-style-type: none"> • Perform a medication use evaluation. • Apply cost-benefit, formulary, and/or epidemiology principles to medication-related decisions. • Conduct and document medication reconciliation in high-risk patients. |

Domain 4: Interprofessional Team Member

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| Objective 4.1: Collaborate as a member of an interprofessional team. | 4.1.1 Actively contribute as a member of an interprofessional healthcare team. | <ul style="list-style-type: none"> • Contribute medication-related expertise to the team's work. • Use setting appropriate communication skills when interacting with others. • Use consensus building strategies to develop a shared plan of action. |
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| | | <ul style="list-style-type: none"> • Work collaboratively with pharmacists, technicians and other support staff in the operations of the pharmacy. |
| Domain 5: Ethics and Professional Behavior | | |
| Objective 5.1: Apply ethical and professional behavior. | 5.1.1 Demonstrate ethical and professional behavior in all practice activities. | <ul style="list-style-type: none"> • Adhere to patient privacy standards 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. |
| | 5.1.2 Demonstrate knowledge of and comply with all federal, state, and local laws related to pharmacy practice. | <ul style="list-style-type: none"> • Review and complete California State Board of Pharmacy hospital pharmacy self-assessment form • Review and prepare report on Title 22 Pharmaceutical Service Requirements |

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.](#) 2017 Feb 25; 81(1): S2

V. Evaluations

- A. Grading will be Pass/No Pass.
- 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. 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

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| 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 (Symptoms, Characteristics, History, Onset, Location, Aggravating factors, Remitting 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: <input type="checkbox"/> Needs treatment (e.g., chronic condition is uncontrolled, acute problem requires drug therapy) <input type="checkbox"/> Refer | | | |
| Current Therapy | <ul style="list-style-type: none"> ▪ 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? | | | |
| <ul style="list-style-type: none"> ▪ Indicated? ▪ Effective? ▪ Safe? | PROS: Identify patient-specific pros of current therapy <ul style="list-style-type: none"> ▪ | CONS: Identify patient-specific cons of current therapy <ul style="list-style-type: none"> ▪ | | |
| New Therapy | What other meds could be considered? What is the anticipated effect of new therapy? Will it achieve goals? | | | |
| <ul style="list-style-type: none"> ▪ Add-on? ▪ Alternative med? | 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 <ul style="list-style-type: none"> ▪ | | | |
| Recommended Drug Therapy | <ul style="list-style-type: none"> ▪ Current therapy (continue/increase/decrease/stop): ▪ New drug therapy (start): Drug name(s), strength, dose, route, dosing frequency ± duration of therapy | | | |
| Non-Drug Therapy | Patient-specific lifestyle modifications (e.g., specific targets for diet, exercise, tobacco, alcohol, actions to do/avoid...) <ul style="list-style-type: none"> ▪ | | | |
| Monitor/Follow-up | Efficacy monitoring <ul style="list-style-type: none"> ▪ What monitoring (S/O) parameters will indicate if therapy is working? ▪ How often should parameters be checked? | | Toxicity/adverse effects monitoring <ul style="list-style-type: none"> ▪ 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? | |
| <ul style="list-style-type: none"> ▪ What ▪ When With who | | | | |
| Patient Education (for selected plan) 3 Prime Questions Disease education | <ul style="list-style-type: none"> ▪ 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 ▪ General care/preventative measures ▪ Lifestyle changes/non-drug therapy | | | |
| ± Coordinate Care | <ul style="list-style-type: none"> ▪ ± Considerations for ensuring access to medication (e.g., who will prescribe, where to get medication, cost) | | | |
| ± Documentation | <ul style="list-style-type: none"> ± Communicate plan to other providers (e.g., document in health record, phone call, provide written summary to patient) | | | |