Appendix C Infectious Diseases

PGY2 Infectious Diseases Pharmacy Residency Program Overview

National Matching Service Code: 509655
https://health.ucsd.edu/specialties/pharmacy/residency/Pages/infectious_diseases.aspx

The UC San Diego Health Department of Pharmacy and the UC San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS) offers a one-year specialty residency in infectious disease pharmacy practice beginning August 1st.

Scope:
UC San Diego Medical Center consists of two acute care hospitals and associated outpatient clinics. The Medical Center is affiliated with the UC San Diego School of Medicine and the UC San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences. The Department of Pharmacy provides clinical services at two hospitals and 5 outpatient pharmacies with specialty services including critical care, trauma, burn, internal medicine, surgery, cardiology, oncology, solid organ and bone marrow transplantation, infectious diseases, HIV/AIDS and neonatal ICU. This specialty residency balances direct patient care, research, and teaching opportunities and is tailored to the individual’s interest within the infectious diseases discipline. Primary service responsibilities include antimicrobial stewardship, attending daily microbiology laboratory rounds, and participation with the Infectious Diseases Consultation Service. A broad range of electives are available for the resident to select from including, critical care, trauma, burn, internal medicine, surgery, cardiology, oncology, hepatology, solid organ and bone marrow transplantation, infection control and epidemiology, HIV/AIDS, and pediatric infectious diseases. Teaching activities include regular didactic presentations, involvement with the UC San Diego School of Pharmacy and Pharmaceutical Sciences courses, (e.g., conference leader for third year microbiology therapeutics course, lecturer in microbiology therapeutics course), and clerkship preceptorship for PGY1 pharmacy practice residents and fourth-year UC San Diego pharmacy students during their clinical infectious diseases rotation. The ability to work independently and to supervise pharmacy students and residents will be emphasized. The resident will participate in all of these activities and will also have a longitudinal clinical practice site. A residency project will be completed and presented at the Western States Resident’s and Fellow’s Conference or other suitable professional meeting. Scientific writing is strongly emphasized and the preparation and submission of a manuscript will be expected. Minimal staffing component and professional time off to attend pharmacy and ID related professional meetings.

Purpose
The purpose of the UC San Diego Infectious Diseases Pharmacy Residency is to train and educate pharmacists in the delivery of exemplary pharmaceutical care to patients with infectious diseases. This PGY2 infectious diseases residency embraces the concept that infectious diseases pharmacy practitioners share in the responsibility and accountability for optimal drug therapy outcomes. Infectious diseases pharmacy residents must function independently as practitioners through conceptualizing, integrating, and transforming accumulated experience and knowledge into improved drug therapy for patients. The resident(s) will engage in various learning experiences with depth, allowing them to understand and appreciate the implications of medication therapy used in various disease states commonly encountered in this volatile patient population. These advanced practitioners will demonstrate leadership and practice management skills, and will develop proficiency in communication through educating other health care professionals, patients, and students on infectious diseases issues. The practitioners will develop the skills necessary to conduct an infectious diseases research project as well as demonstrate professional maturity by strengthening their personal philosophy of practice, monitoring their own performance, and exhibiting commitment to the profession. Graduates of this specialized program will create working career plans and possess intense, focused marketable job skills that should prepare them for career opportunities in any infectious diseases specialized health care organization.

This specialty residency balances service, research, and teaching opportunities and is tailored to the individual. Primary service responsibilities include antimicrobial stewardship, attending daily microbiology laboratory rounds, and participation with the Infectious Diseases Consultation Service. A broad range of electives are available for the resident to select from. Teaching activities include didactic, therapeutics conference leader, and clerkship preceptorship of first-year pharmacy practice residents and fourth-year UC-San Diego pharmacy students in their clinical infectious diseases rotation.

Program Outcomes
Our Infectious Diseases (PGY2) Pharmacy residents completing this program will be advanced practitioners proficient in the areas of:
- Demonstrating leadership and practice management skills. Our graduating residents will effectively strengthen
their knowledge, skills, and abilities in all key areas of practice management. These areas would include, among others, exploring their own professional growth improving the quality of one’s own self-assessment, developing effective negotiation skills to resolve conflicts, and demonstrating a commitment to advocacy for the optimal care of patients.

- **Optimizing the outcomes of patients with infectious diseases by providing evidence-based medication therapy as an integral part of an interdisciplinary team.** By consistently using an efficient and comprehensive pharmacy practice methodology, our graduating residents will become leaders in medication safety and have enhanced patient outcomes by integrating patient- and evidence-based disease-specific pharmacotherapy at the level of an advanced practitioner in various critical care settings.

- **Demonstrating excellence in the provision of training, including preceptorship, or educational activities for health care professionals and health care professionals in training.** Our graduating residents will become proficient in educating health care professionals, patients, and students on infectious diseases topics. Our residents will also be able to provide concise and accurate responses to requests for infectious diseases drug information from health care providers.

- **Demonstrating the skills necessary to conduct an infectious diseases pharmacy research project.** Our graduating residents will be engaged in multiple projects related to infectious diseases throughout the year including a continuous quality improvement (CQI) project and at least one formal research project. Enhanced project management skills and familiarity of technological systems will support the resident throughout these endeavors.

- **Demonstrating the skills required to function in an academic setting.** The resident prepares and delivers a formal didactic lecture within to pharmacy students at the Skaggs School of Pharmacy and Pharmaceutical Sciences on a topic relevant to the specialized area of pharmacy residency training.

**Number of residency positions available:** 1 resident is accepted each year.

**House Officer Details:**
The annual stipend is currently $52,000. Benefits include medical, dental, and vision insurance. In addition, vacation, sick and professional leave are provided. Please visit the UC San Diego Health Pharmacy Residency webpage for more information about duty hours, leave, benefits, position description, terms of dismissal, and more. Click on the House Officer Policy and Procedure Document: [https://health.ucsd.edu/specialties/pharmacy/residency/Pages/Salary-and-Benefits.aspx](https://health.ucsd.edu/specialties/pharmacy/residency/Pages/Salary-and-Benefits.aspx)

**Requirements:**
An on-site interview is required and will be held during late January through early March. This specialty residency program participates in the ASHP Resident Matching Program. **All applicants must be enrolled in the Resident Matching Program.** To facilitate this enrollment process and for further information, please visit the following website: [www.natmatch.com/ashprmp](http://www.natmatch.com/ashprmp)

If matched with the UCSD Residency Program, matched candidates must have all of the following:
1. Graduated from an accredited school of pharmacy with a Doctor of Pharmacy degree
2. Successfully completed a PGY1 pharmacy practice residency
3. Obtained California pharmacy licensure prior to beginning residency (absolute deadline = November 1st of entering year). The residency offer may be rescinded if the resident does not take the CPJE prior to August 1st or does not pass the CPJE on the first attempt.

**Application:**
Applications will be accepted when PhOCAS opens and due by December 31st. Applications should be submitted through PhORCAS and include the following:

1. **Letter of intent.** Please address the following items in your letter of intent and how you will play a role in these items. Your letter of intent should be no more than two pages long.
   a. Address where you feel infectious diseases pharmacy will be in 5 years.
   b. Address your vision of an infectious diseases pharmacist practicing at the top of their license.
2. **Current Curriculum Vitae with all experiential completed and anticipated rotations as well as pharmacy work experience.**
3. Three Letters of recommendations are required. At least 2 of the letters should be from preceptors or supervisors who can directly comment on your clinical and practice skills. Note: Letters of recommendation should be submitted through the Phorcas web portal application process (WebAdmit.org).

Program Structure:
- 2-4 weeks of orientation/training/research (duration determined by the resident’s previous experience)
- 4 core rotations (ID Consult Service (twice), Critical Care, Hem/Onc – BMT or HIV) – 6 weeks long
- Foundations in microbiology laboratory – 4 weeks long
- Antibiotic surveillance – 2 weeks long (concentrated as ASP incorporated throughout the entire year)
- 3 - 1 month long electives (may repeat any)
- 2 weeks research time (including time provided during orientation)

Required Learning Experiences for PGY2 Infectious Diseases:
Descriptions of each learning experience can be found in PharmAcademic
1. Four core rotations (ID Consult Service (twice), Critical Care, Hem/Onc – BMT or HIV) – 6 weeks in length
2. Foundations in microbiology laboratory rotation – 4 weeks in length
3. Antibiotic surveillance 2 weeks (concentrated as ASP incorporated throughout the entire year)
4. Three 4-week elective blocks
5. Professional meeting attendance
6. Two weeks research time

Elective Rotations (aka supplemental learning experience): Descriptions of each learning experience can be found in PharmAcademic
There will be a total of 18 rotations that the resident can choose their three electives from as the list below identifies, they will be patient care services that are either the primary team caring for the patient (e.g. Solid Organ Transplant) or a consultative service supporting the patient (e.g. Inpatient AIDS). The elective choices allow the resident the flexibility to tailor their PGY2 experience to an area of interest. The primary focus during these elective rotations would be the infectious diseases associated with these patient populations.
- Coronary Care Unit (CCU)
- Medical ICU
- Inpatient AIDS Service
- Ambulatory AIDS Service
- Neonatal ICU
- Nephrology
- Hematology/Oncology
- CT Surgery
- Bone Marrow Transplant
- Solid Organ Transplant
- Surgical ICU- Critical Care
- Burn ICU
- Pharmaceutical Industry
- Pediatric Infectious Diseases at Rady’s Children’s Hospital
- Infection Control / Epidemiology
- Inpatient Infectious Diseases practice at the San Diego Veterans Hospital
- Pharmacoeconomics / Health Economic
- Hepatology
Longitudinal Clinic:
In addition to the residents acute care experience, the residents will participate in a longitudinal clinic of their choice during their residency. This clinic involvement will be a ½ day per week and will give the resident a chance to view the outpatient management of patients on a long term basis. It is highly encouraged that the resident participates in the HIV/HCV co-infection clinic.

Staffing:
Staffing will be incorporated into the residency experience with weekend shifts that provide the opportunity for PGY2 residents at the UC San Diego Thornton hospital. The PGY2 resident will be invited to staff 16 weekends (which includes 1 minor holiday weekend PLUS 1 major holiday (Thanksgiving, Christmas, or New Year’s)). The resident will get 13 paid days for holidays and 12 sick days for the academic year. Vacation time will be in accordance with GME rules and will be defined as 20 days of vacation PLUS 5 days for professional leave to attend meetings or conferences.

Resident Project:
The resident will be responsible for conducting 1 research project throughout the academic year that will be completed and presented at the Western States Conference or an equivalent conference. If time allows, the resident will be involved with the initiation of a second project. This initiation phase will involve defining the study design, writing up the protocol and beginning the IRB approval phase. The purpose of starting a second project is to facilitate subsequent critical care residents who can then finish the projects that were started the previous year. A list of project ideas will be generated from the preceptors and resident is expected to select a project during the first month of the residency year.

CQI Project:
The residents will need to start and finish a Continuous Quality Improvement project during this academic year. The CQI topics will primarily be generated from the core preceptors and be strongly related to the infectious diseases population. A list of project ideas will be presented to the residents on August 1st. Selection of a topic will need to be finalized by the end of the second week after starting the residency.

Publication:
The resident will be required to write a manuscript suitable for publication by the end of their residency year. The purpose of this requirement will be the development of scientific writing and communication skills. The types of publishable literature can include any of the following types of manuscripts:

- Case Reports with a review of relevant literature
- Primary research/original research
- Medication Use Evaluation
- Meta-analysis of a disease state or therapy
- Review article

Meetings:
The residents will have the opportunity to attend various professional meetings throughout the year. The annual travel stipend is variable based on funding. In the past, residents have received a set stipend for the year which they can use at their discretion for registration, travel, accommodations, etc. The cost of attending Western States (or an equivalent conference) will be deducted from the travel stipend, along with any other conferences the resident chooses to attend. Residents are encouraged to attend a specialty meeting (e.g. Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), or IDWeek (IDSA), or MAD-ID (Make a Difference in Infectious Diseases)). Attendance at Western States Conference (or an equivalent conference to present their research) is mandatory.

Presentations and Teaching:
The resident will have the opportunity to give many educational lectures to their colleagues throughout their residency year.

Grand Rounds: The resident will deliver a 1-hour CE lecture to the pharmacy staff regarding a controversial topic in infectious diseases.

Weekly Didactic Forums: In addition to the grand rounds, the resident will be required to research and deliver a 20-minute weekly to bi-monthly mini-lecture on various didactic topics throughout the year. These topics will be related to the ASHP supplemental standard for an Advanced Practice Residency in Infectious Diseases and will be relevant to the patient population they are currently involved with from a rotational perspective. These presentations will be given during pharmacy student/preceptor rounds or to the core clinical pharmacy staff.
Teaching - Skagg's School of Pharmacy and Pharmaceutical Sciences:
Involvement with UC San Diego’s School of Pharmacy will vary depending on the preceptor but it is anticipated that the resident will participate in the therapeutics case conferences as a conference leader typically in the fall quarter. There will also be an opportunity to provide didactic lecture(s) during the Winter and Spring quarters Medical Microbiology and Infectious Diseases Therapeutics course presenting formally, preparing the lecture syllabus and prepare exam questions. There is also an opportunity to participate as a course workshop facilitator covering cutting edge ID topics during the Winter and Spring quarters. Direct student precepting would occur while on rotation with UC San Diego pharmacy students jointly with the faculty.

Assessment Strategy – PharmAcademic:
The PGY2 Infectious Diseases Specialty Residency Program uses the ASHP on-line evaluation tool called PharmAcademic, which is available for all ASHP-accredited pharmacy residency programs. This system, which is technologically supported by the McCreadie Group, supports the ASHP Residency Learning System (RLS).

Residents who are matched with this PGY2 specialty program are entered into PharmAcademic prior to their arrival in August. The incoming resident completes two pre-residency questionnaires that help the Residency Program Director (RPD) design a residency year that is tailored to the specific needs and interests of the resident:
- ASHP Standard Entering Interests Form
- Goal-Based Entering Interests Form

Residents’ schedules and assigned Goals and Objectives are entered into PharmAcademic. We have chosen to use the PharmAcademic evaluation tools for our Learning Experiences. For each Learning experience, the following Assessments are completed:
- Preceptor Assessment of Resident: Summative (for each Learning experience)
- Resident Self-Assessment: Summative-self (for each Learning experience)
- Resident Assessment of the Learning Experience
  - Resident assessment of Preceptor
  - Resident assessment of Learning Experience

Preceptors and residents are encouraged to exchange in on-going, daily verbal feedback throughout each rotation experience. Six-week block rotations have a mid-point summative evaluation as well. The Resident and Preceptors are trained and reminded throughout the year to complete evaluations in a thorough (quantitatively and qualitatively) and timely manner. To this end, evaluations may be used, not only as assessment tools, but as tools that Preceptors may turn to for help in guiding Residents to improve, grow and achieve the residency programs and the residents’ goals and objectives for the residency year. The RPD reviews all evaluations and solicits verbal feedback from preceptors and residents to provide guidance to help the resident maximize the residency experience.

The Residents discuss their Program goals and interests quarterly (Quarterly Update and Customized Training Plan) with the RPD Form to evaluate where they are in meeting the residency goals and to set or modify goals for the remaining six months of the residency program. Residents may meet as needed as their interests change throughout the year. The resident may request schedule modifications throughout the residency year and the RPD will make all efforts to accommodate these requests. Assessment tools will be adjusted as changes are made.

The Resident complete the ASHP PharmAcademic exit evaluation. Residents also are requested to complete a year-long evaluation of the Residency Program.

The results of these year-end Program evaluations are reviewed by the RPD for potential merit and potential action plans are developed in an effort to achieve continuous quality improvement.
Assessment Overview (PGY2 Infectious Diseases)

It is the resident’s responsibility to initiate the evaluation process with each rotation preceptor prior to the end of each learning experience and to schedule at least quarterly meetings with the residency director.

<table>
<thead>
<tr>
<th>Learning Experience</th>
<th>Frequency</th>
<th>Summative</th>
<th>Summative-self</th>
<th>Resident Assessment of Preceptor and Learning Experience</th>
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<tr>
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<td>Critical Care selective elective</td>
<td>Final</td>
<td>X</td>
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<tr>
<td>BMT selective elective</td>
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<td>HIV selective elective</td>
<td>Final</td>
<td>X</td>
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<td>Infectious Diseases Part 1</td>
<td>Midpoint and Final</td>
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<td>X</td>
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<td>Midpoint and Final</td>
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<td>Microbiology Laboratory</td>
<td>Final</td>
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<td>Microbiology Workshop</td>
<td>Midpoint and Final</td>
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</tbody>
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PGY2 Infectious Diseases Competency Areas, Goals and Objectives:

- Educational Outcome: broad categories of the residency graduates' capabilities.
  - Outcome R1: Promote health improvement, wellness, and prevention of infectious diseases
  - Outcome R2: Optimize the outcomes of individuals with an infectious disease by providing evidence-based, patient-centered medication therapy as an integral member of an interdisciplinary team or as an independent clinician. Conduct infectious disease pharmacy practice research.
    - Outcome R3: Demonstrate leadership and practice management skills. Manage and improve anti-infective use process. Serve as an authoritative resource on the optimal use of medications to treat individuals with infectious disease.
Outcome R4: Demonstrate excellence in the provision of educational activities for health care professionals and health care professionals in training centering on optimizing anti-infective pharmacotherapy.

- Educational Goals: Goals listed under each outcome are broad sweeping statements of abilities.
- Educational Objectives: Resident achievement of educational goals is determined by assessment of the resident’s ability to perform the associated educational objective below each educational goal.
- The resident is encouraged to read detailed information about each goal at the ASHP website (click on newly approved Infectious Disease (PGY2), 2017)
  https://www.ashp.org/Professional-Development/Residency-Information/Residency-Program-Directors/Residency-Accreditation/PGY2-Competency-Areas
- For information about Goals and Objectives Taught/Taught and Evaluated in Learning Experiences, please visiting PharmAcademic, go the ‘Reports’ tab, and click on ‘Goals and Objectives Taught/Taught and Evaluated in Learning Experiences’.

**PGY2 Infectious Diseases Residency Requirements for Completion/Graduation:**

- Successful completion, all learning experience all learning experience objectives marked satisfactory progress (SP), ACH or achieved for residency (ACHR) by the final evaluation, of all learning experiences. Any expectations of the residents that are not met or learning objectives with needs improvement (N/I) from an on-demand or scheduled evaluation will result in a meeting between the learning experience preceptor, RPD, and resident and a plan of correction will be formulated. Failure to complete the plan of correction, may result in disciplinary action.
- ≥90% of RLS goals marked “Achieved for the Residency” by the end of the year (as evaluated by individual rotation preceptors or by the RPD upon final review of the resident’s progress). All patient care goals (Outcome R1: Patient Care) and objectives must be achieved.
- Completion of a pharmacy residency project. Primary investigator with formal IRB approved research project, develop and submit an abstract for a presentation at a professional meeting and complete a manuscript suitable for publication.
- Present a clinical forum and a formal pharmacy grand rounds.
- Teaching opportunity by assisting with SPPS medical microbiology and infectious diseases therapeutics course by delivering didactic lectures and participate as a workshop facilitator.
- Successful completion of the longitudinal clinic experience rotation.
- Twelve months maximum is allotted to successfully complete the core requirements. If a core rotation must be repeated, then elective time shall be used. If the above requirements are not met in full, the residency certificate may be withheld at the discretion of the residency director.