

APPENDIX B



DEPARTMENT OF PHARMACY SERVICES

**PGY2 Oncology Pharmacy Residency Manual and
Training Agreement Appendix
2024-2025**

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PGY2 ONCOLOGY PHARMACY RESIDENCY DETAILS

Summary of Rotations and Requirements

Core Rotations:

- **Orientation (one month)**
 - Orientation to the hospital, pharmacy, drug distribution systems, computer systems, unit dose and IV admixture programs. The resident will receive a general introduction to the hospital which will include an orientation by the official hospital human resources department, pharmacy department/residency program, mentorship program, research program and hospital systems training by pharmacy informatics. The resident will then spend concentrated training in the inpatient IV room, inpatient hospital distribution area, IV chemotherapy compounding room and oncology pharmacy distribution role in the oncology pharmacy satellite.

- **Acute Care Hematology Oncology (one month)**
 - The resident is expected to provide clinical pharmacy services to all acute care medical oncology (MO) consult patients. The resident will participate in daily patient care rounds with the MO team. The oncology pharmacy resident is responsible for identifying and resolving any oncology medication-related issues for all patients on the service. The MO team consists of an oncology attending physician, 1-2 oncology fellows, medical residents, an on-call pharmacist, PGY2 oncology pharmacy resident, medical/pharmacy students. The MO consult service primarily services the solid tumor patient population; however, patients with hematological disorders are also treated. Malignancy types most cared for by the MO service include sarcoma, head and neck, pancreatic, breast, colorectal, lung, renal cell, and melanoma cancers. Daily patient care rounds are a required component of this rotation experience and residents are required to round 5 days a week.

- **Inpatient Bone Marrow Transplant (two months)**
 - The resident is expected to provide clinical pharmacy services to all patients on the bone marrow transplant (BMT) service, which is comprised primarily of patients with leukemia, lymphoma, multiple myeloma, and other hematological malignancies. The resident will participate in daily patient care rounds with the BMT Service. The BMT team normally consists of an attending physician, oncology fellow, nurse practitioner, nurse clinician, and pharmacist. There may also be a PGY1 pharmacy resident and/or pharmacy student. The BMT pharmacy resident is responsible for identifying and resolving any medication-related issues for all patients on the service. Expectations of the resident will increase from the first to the second month of rotation. The rotation experience is set up as a two

month sequential block. Daily patient care rounds are a required component of this rotation experience. The resident is expected to participate in patient rounds with the fellow, nurse practitioner or attending physician each morning prior to working rounds.

- **Ambulatory Care Solid Tumor (two months)**
 - Ambulatory care rotation is a two-month required learning experience for the PGY-2 oncology pharmacy resident. The practice area is located across various supportive care, solid and hematologic malignancy clinics of Brown Cancer Center. The resident in clinic works in collaboration with the physicians, nurse clinicians, disease coordinators, and research coordinators in dosing, therapy choices, supportive care measures, oral chemotherapy, and acting as an educator/liaison between infusion nursing, pharmacy, and the medical oncology team both on a patient case-by-case basis and when new standards of care for specific diseases or medications emerge. The pharmacy resident, under coaching and facilitation of the preceptor, will learn the role of a specialty pharmacist and provide care for outpatient oncology patients. The resident attends clinic four days per week. This rotation is scheduled in the latter six months of the residency year.

- **Ambulatory Care – Bone Marrow Transplant / Hematologic Disorders (one month)**
 - The ambulatory care elective rotation in hematologic disorders / transplant specifically focuses on the treatment of patients with multiple myeloma, lymphomas, leukemia, non-malignant hematologic disorders and hematopoietic stem cell transplant. The specialty pharmacist in these clinic areas work in collaboration with the physicians, nurse clinicians, pharmacists (BCC satellite pharmacist, community pharmacist, inpatient pharmacists), medication access coordinators, and research coordinators in dosing, therapy choices, supportive care measures, chemotherapy, and acting as an educator/liaison between infusion nursing, pharmacy, and the inpatient Bone Marrow Transplant team. The resident will perform the same duties as the clinical pharmacy specialist and may serve as a preceptor to pharmacy students if on rotation concurrently. The resident is expected to attend clinic 4 days week.

Longitudinal Rotations:

- **Ambulatory Care (10 month)** (avg 8 hrs/week)
 - Longitudinal ambulatory care rotation is a ten-month required learning experience for the PGY-2 oncology pharmacy resident. The practice area is located in the breast clinic for approximately four months and the other six months is split equally between lung clinic and gastrointestinal malignancy clinic. These clinics are located on the 2nd and 3rd floor of Brown Cancer Center and they meet 1 day per week. The specialty pharmacist in these clinics works in collaboration with the physicians, nurse clinicians, disease coordinators, and research coordinators. The pharmacist provides clinical support in decision making for drug dosing,

therapy choices, supportive care measures, oral antineoplastic medications, and acts as an educator/liaison between infusion nursing, pharmacy, and the medical oncology team both on a patient case-by-case basis and when new standards of care for specific diseases or medications emerge. The pharmacy resident, under coaching and facilitation of the preceptor, will learn the role of a specialty pharmacist and provide care for outpatient oncology patients. The resident attends breast clinic one day a week for 4 months, gastrointestinal clinic and lung clinic each for 3 months, one day a week throughout the residency year.

- **Service (52 weeks)**

- **Distributive:** Resident(s) will learn to effectively staff the oncology satellite outpatient pharmacy. Responsibilities include preparing and dispensing oncology drugs and ancillary supportive medications according to facility requirements. The resident pharmacist will work in collaboration with the pharmacy technicians, nurses, physicians, and research coordinators in reviewing labs, documenting chemotherapy dispensed, preparing chemotherapy, and supervising the technicians. Additional duties will include providing drug information, assisting with managing adverse drug reactions in the infusion clinic, checking orders for accuracy, and other duties as the opportunity arises. Additionally, the resident will provide clinical documentation of pharmacy services and provide decentralized order entry (while on inpatient rounding rotations) to ensure safe and appropriate medication therapy for patients. The resident is expected to work a total of 208 hour distributive shifts in the oncology pharmacy satellite throughout the residency year. The distributive shifts will be divided into major two major blocks. Approximately, half of the hours will occur during orientation and research/staff months. The other half of the hours will occur 1 day per week during ambulatory care solid tumor 2 month LE. If needed to meet the 208 hour requirement, the resident may staff 1-2 days during select CORE monthly rotations.
- **Administrative:** (avg 1 hr/week) Resident will continuously be involved in staff planning activities, learn process of developing oncology pharmacy budget, exposure to various management strategies, develop skills to create a new service within the organization, develop leadership skills and participate in other opportunities that require resident to interact with various departmental administrative teams.

- **Research (52 weeks)** (avg 5 hrs/week)

- Resident(s) will complete a 52 week residency research project, submit the project proposal to the project primary preceptor and residency director, obtain approval from the hospital Institutional Review Board (IRB), participate in Microsoft Access training (if needed), prepare a poster for HOPA, prepare a final manuscript and submit manuscript for publication prior to residency completion. The resident will be allotted ~ 10 project days which can be used for research and drug information projects. These days will take place throughout the year with the majority occurring during orientation, and Research/Staff LE. Additionally,

the resident will work with Pharmacy Investigational Drug Services and be involved with a newly starting or ongoing research protocol, including but not limited to, creating the study binder, attending site visits from the sponsor, attending the CSRC (clinical science research committee) for study review and creating the study prescriber order template. Throughout the residency year, the resident will continue to work longitudinally toward accomplishing their research goals.

- **Drug Information (52 weeks)** (avg 2 hours/week)
 - Resident(s) will complete a quality improvement or medication use evaluation project. This project and its details will be presented to leadership upon completion typically during the second half of the year. If applicable the resident(s) will submit this project for publication. The resident will also review, revise two policies or procedures or create one new oncology pharmacy policy as well as research and prepare two drug monographs to the Oncology P & T subcommittee and UofL Health P & T committee. The resident will participate in informatics build, design and validation for monograph formulary additions. The resident(s) will coordinate at least one public health community service project during the year. The resident will be allotted ~ 10 project days which can be used for research and drug information projects. These days will take place throughout the year with the majority occurring during orientation and research/staff LE.

- **Investigative Drug Services (IDS) (52 weeks)** (avg 1 hour/week)
 - Residents will gain experience working with investigational drugs and Pharma-sponsored trials. Investigational Drug Service (IDS) within University of Louisville Health (ULH) is comprised of the following sites: Brown Cancer Center, University Hospital, UofL Clinical Trials Unit, Jewish Hospital, and Med Center Northeast. ULH houses Phase 1, 2, and 3 clinical trials conducted in both inpatient and outpatient settings. The pharmacy resident will be assigned 2 clinical trials (depending on the complexity of the available studies) to oversee. Under the supervision of the pharmacists, the resident will review the protocols, attend necessary meetings/site visits, develop order sets, organize the pharmacy binder, and provide necessary education to the clinical staff (ex. Pharmacy instruction sheet, inservices). The resident will also be responsible for reporting adverse effects and deviations as necessary.

- **Teaching & Learning (Elective/Optional if was not completed/offered in PGY1 year)** (avg 2 hrs/week)
 - Resident(s) assist with teaching/precepting of Pharm.D. students during core rotations and student case conferences. Residents participate in the Scholarship of Teaching and Learning Certificate (STLC) Program in conjunction with Sullivan University, College of Pharmacy. Additional activities include: providing lectures for Sullivan University College of Pharmacy pharmacotherapy series, leading small group discussions/sessions, and presenting CE lectures at Sullivan University College of Pharmacy Grand rounds and to the University of Louisville

Health Care pharmacy department (required for PGY2 oncology residents that have not obtained STLC prior to PGY2 residency).

Elective Rotations:

- **Palliative Care (one month)**
 - The palliative medicine interdisciplinary team consists of the attending physician, oncology pharmacy resident, nurse practitioner, chaplain, psychologist, and other learners. The oncology pharmacy resident is expected to provide clinical pharmacy recommendations for consult patients. The resident will participate in daily patient care rounds with the palliative medicine team and is responsible for identifying and resolving any medication-related issues. The resident is expected to act as a liaison and communicate recommendations and interventions to the clinical pharmacist of the patient's primary team. The patient population treated by the palliative medicine service includes patients with solid tumors, hematologic malignancies, hematopoietic stem cell transplantation (HSCT) recipients as well as non-hematologic/oncologic conditions. The resident is expected to round 3 days a week and attend outpatient palliative care clinic 1 day per week.

- **Infectious Diseases (one month)**
 - Participates in daily rounds with the Infectious Diseases consult service that provides consultative services to patients within the entire hospital system, actively monitor antibiotic use for drug appropriateness, dosing, duration, route, monitoring and efficacy, communicate ongoing patient information/labs to team on a daily basis, extensive pharmacokinetic drug monitoring, pharmacodynamic dosing adjustments, clinical intervention documentation, vaccine screening, and patient/physician medication-related education as needed. The resident is expected to round 4 days a week.

- **Pediatric Oncology (one month)**
 - The practice area is located at Norton Children's Hospital. The resident is expected to provide clinical pharmacy services to all patients on the pediatric oncology service. The resident will participate in daily patient care rounds with the pediatric oncology team and is responsible for identifying and resolving any medication-related issues. The pediatric oncology multidisciplinary team consists of a pediatric oncology attending physician, nurse practitioners, medical resident(s), pediatric oncology pharmacist, oncology pharmacy resident and medical and/or pharmacy student(s). The patient population treated by the pediatric oncology service includes pediatric hematologic disorders, pediatric malignancies and hematopoietic stem cell transplantation (HSCT) recipients. Malignancy types most commonly cared for by the service include acute leukemia, lymphoma, sarcoma, and neuroblastoma and non-malignant blood disorders (hemophilia, aplastic anemia, sickle cell anemia, and ITP). The resident is expected to round 4 days a week.

- **Multimodality (one month)**

- This multimodality elective rotation is a dedicated month of experience where the resident will collaborate with various healthcare teams to experience the oncology patients overall treatment plan. The healthcare teams include but not limited to radiation oncology, palliative care, surgery oncology, colorectal surgery, rehabilitation medicine, and interventional radiology. They will attend outpatient clinics and operating rooms as dictated by the discipline. While on palliative care, the resident will attend daily rounds and develop evidence-based treatment plan with the team.
- **Clinical Infusion (one month)**
 - Infusion- clinical elective rotation is a 1 month learning experience. The clinical infusion pharmacist will be a hybrid position with both clinical and staffing responsibilities. The pharmacist will work in collaboration with the staffing pharmacist, pharmacy technicians, nurses, physicians, and research coordinators in reviewing labs, processing orders, and documenting chemotherapy dispensed. The pharmacist will also work in collaboration with physicians, nurse clinicians, ambulatory care clinical pharmacists, medication access coordinators, and research coordinators to ensure accurate chemotherapy dosing, and supportive care measures. The pharmacist will serve as an educational liaison for both patient and nurses in the infusion center.
- **Academia (one month)**
 - The Academic rotation is a 1-month elective rotation at Sullivan University College of Pharmacy (SUCOP). SUCOP is a 3-year, accelerated Doctor of Pharmacy program that educates approximately 300 students on an annual basis through both the didactic and experiential curricula. Pharmacy residents will perform didactic teaching in both large and small group settings, as well as precept students on academic APPE rotations. In addition to teaching, residents will gain experience in the areas of service, scholarly activity, and leadership.
- **Oncology Community-Based Practice Clinic (one month)**
 - The community-based practice rotation is a 1-month elective rotation for the PGY-2 oncology pharmacy resident. The practice site is located at the Brown Cancer Center - Bluegrass Clinic. The specialty pharmacists in this clinic area works in collaboration with the community-based physicians, nurse clinicians, disease coordinators, BCC outpatient pharmacists, medication assistant coordinators, and social workers. Hematology/oncology pharmacists provide support through recommendations regarding therapy choices, supportive care measures, oral chemotherapy, and act as an educator/liaison between infusion nursing, pharmacy, and the hematology/oncology team both on a patient case-by-case basis and when new standards of care for specific diseases or medications emerge. In addition, the hematology/oncology pharmacist is a patient educator and supporter.
- **Gynecology/Oncology (one month)**

- Gynecology Oncology LE is an elective 1-month rotation. During outpatient clinic days the resident will participate in the care of oncology patients via telehealth appointments focusing on patients receiving chemo/immunotherapy and oral antineoplastic agents. Occasionally, patients are seen in the office on the 3rd floor of BCC for adverse effect management and/or new patient referrals. In addition, the resident will attend surgeries with the gynecology oncology team the other three days per week at U of L Hospital OR suite. The resident will become familiar with surgery terminology, anatomy of removal, and different types of surgeries. The resident will follow up as needed with the patient in the post-operative setting for those admitted to U of L Hospital as well as will coordinate chemotherapy admissions to 5E or 6S. The resident will become familiar with gynecology malignancy evidence-based treatment options, monitoring parameters, and goals of care.
- **Oncology Pharmacy Informatics (one month)**
 - Oncology Pharmacy Informatics is an elective 1-month rotation occurring at the Brown Cancer Center and virtually. The resident will participate in clinical and pharmacy-related teams that design, implement and maintain electronic systems in the hospital. Focused educational experiences will include, but are not limited to, project management, database and application management, clinical documentation and decision support, infrastructure and interfacing.
- **Specialty Pharmacy Operations (one month)**
 - Specialty Pharmacy Operations is a 1-month elective experience that will allow the resident to execute the functions of the staffing clinical pharmacist in a specialty pharmacy. Specifically, the resident will gain experience in specialty pharmacy intake (data entry, benefits investigation, financial assistance, patient onboarding, etc.), fulfillment (distribution, cold chain, supplies, etc.) and clinical services in accordance with the Patient Management Program. The resident will complete topic discussions to build their specialty disease state clinical knowledge in multiple specialty disease states managed by UofL Specialty Pharmacy.

Scheduling of Rotations During Residency Year:

- The oncology pharmacy practice residency is a 12-month (52 week) program. Currently, eight months are dedicated to core rotations and four are available as elective rotations.
- Orientation (July) and Research/Project (December) are typically dedicated to orientation, research, and service components of the residency.
- During the chosen month from August – October, Acute Care Hematology/Oncology is expected to be completed.
- Bone Marrow Transplant is expected to be completed as a two-month sequential experience prior to December of the residency year.
- Electives are scheduled throughout the year based on availability of the rotation.

ULH PGY2 Oncology Program Requirements for Successful Residency Completion*

Orientation/HR	Date Completed
Licensure by September 1 st (or by October 1 st with REC approval)	
PGY1 Completion Certificate within 30 days from start date	
BLS certification (if not previously completed)	
ACLS certification (if not previously completed)	
Completed annual sterile compounding competencies	
Completed all quarterly HR/clinical competencies (quarterly check off)	Q1: Q2: Q3: Q4:
Pharmacademic/Electronic Files	Date Completed
Resident has uploaded all completed deliverables within Pharmacademic files (quarterly check off)	Q1: Q2: Q3: Q4:
Appendix items (direct patient care and non-patient care) have been completed and documented within Pharmacademic	Q1: Q2: Q3: Q4:
Objective Achievement	
Resident has successfully ACH-R $\geq 80\%$ of required and elective ASHP objectives with no active "Needs Improvement" and ACH-R $\geq 80\%$ (11 out of 13 objectives) in Competency Area 1	
Flipped Model Research	Date Completed
Resident has successfully completed residency research project including: <ul style="list-style-type: none"> • Data collection/statistical analysis of results (<i>list completion date</i>) • Abstract (HOPA) (<i>list completion date</i>) • HOPA poster (<i>list completion date</i>) • IRB (for next year resident class) (<i>list completion date</i>) • Final write-up with manuscript formatted and appropriate for submission to journal of choice (<i>list completion date</i>) 	
Teaching	Date Completed
Resident has successfully completed one (1) 1-hr CE program for UofL Health	
Resident has completed five (5) cancer conferences to oncology team members	1.
	2.
	3.
	4.
	5.
Resident has provided one (1)- 1 hr didactic lecture in an academic setting	
Resident has completed six (6) medical staff in-services	1.
	2.
	3.
	4.
	5.
	6.
Resident has completed one (1) community service program	
Drug Information	Date Completed

Resident has completed medical writing project with updating two (2) existing policies or creation of one (1) new policy	1. 2.
Resident has completed a two (2) drug monographs or one (1) drug class review (excluding biosimilar review)	1. 2.
Resident has successfully completed one (1) performance/quality improvement or medication use evaluation project	
Staffing	Dates and Hours Completed
Resident has completed all staffing/service commitment responsibilities (2 holidays, ~14 clinical weekends, ~208 hours distributive)	
Administration/General Requirements	Date Completed
Resident has attended and participated in required monthly resident meetings (staff meetings, Residency Advisory Committee (RAC), bimonthly Oncology Pharmacy & Therapeutics (P&T), bimonthly Pharmacy & Therapeutics (P&T)	
Resident has documented monthly duty hour and wellness evaluations	
Resident has completed resident job for the year	
Resident has completed the exit evaluation and exit meeting with RPD	

The program will not award a Residency Certificate more than six months beyond the official completion date of the Residency Program.

PGY2 Oncology Program Preceptors

Learning Experience Precepted	Preceptor Name
PGY2 Oncology Residency Director Longitudinal Drug Information Oncology Informatics	Lesley Hall Volz, PharmD, BCOP, DPLA
Bone Marrow Transplant Outpatient Clinic	Lindsay Figg, PharmD, BCOP Megan Burd, PharmD, BCOP
Orientation	Lesley Hall Volz, PharmD, BCOP, DPLA Lauren Ingles, PharmD, BCPS, BCOP
Infectious Diseases	Ashley Ross, PharmD, BCPS
Bone Marrow Transplant Inpatient Service	Timothy Baize, PharmD, BCOP
Clinical Infusion	Lauren Ingles, PharmD, BCPS, BCOP
Acute Care Oncology/Hematology	Alixandra Mann, PharmD, BCOP Katlyn Mulhall, PharmD, BCOP Ryan Bycroft, PharmD, BCOP Logan Roberts, PharmD, BCOP
Pediatric Oncology Inpatient	Josh Elder, PharmD, BCOP
Ambulatory Solid Tumor 2-month Outpatient Clinic	Ryan Bycroft, PharmD, BCOP Alixandra Mann, PharmD, BCOP
Service – Administration	Cathy Whalen, PharmD
Service – Distribution	Lauren Ingles, PharmD, BCPS, BCOP
Longitudinal Ambulatory Care Solid Tumor Outpatient Clinic Breast Lung Gastrointestinal	Lesley Hall Volz, PharmD, BCOP, DPLA Katlyn Mulhall, PharmD, BCOP Brette Conliffe, PharmD, BCOP, DPLA
Longitudinal Research	Lindsay R. Figg, PharmD, BCOP
Longitudinal Investigative Drug Services	Sarah Slabaugh, PharmD
Palliative Care	Logan Roberts, PharmD, BCPS, BCOP

Multimodality	Megan Burd, PharmD, BCOP
Oncology Community-Based Practice Clinic	Logan Roberts, PharmD, BCPS, BCOP
Gynecology/Oncology Outpatient	Jasmine Browning, PharmD, BCOP Mika Kessans Knable, PharmD, BCOP, DPLA
Specialty Pharmacy	Emily O'Reilly, PharmD, BCACP, CSP

ROTATION PRECEPTORS - Multiple

Preceptor responsibilities are as follows:

- Develop goals and objectives for the rotation in conjunction with the Residency Director.
- At the beginning of each rotation, develop a plan for meeting the goals and objectives of the rotation with the Resident and based on the individual Resident's experience.
- Extend sufficient assistance, guidance, and direction to the Resident in order for him/her to meet the goals of the rotation. The Preceptor will meet with the Resident on a regular basis to determine progress.
- Each Preceptor will develop and maintain an appropriate reading library or bibliography of readings for each Resident, which will aid in the attainment of the competencies for the rotation.
- Keep the Residency Director and the Resident's Mentor apprised of any difficulties that a Resident may be having in a rotation, or in the overall residency.
- Provide the resident with continuous verbal feedback during the rotation and formal midpoint and final evaluations as needed for specific activities.
- Complete the Preceptor's Evaluation of Resident at the conclusion of the rotation and review it with the Resident.

PROJECT PRECEPTOR - Multiple

Project Preceptor responsibilities include:

- Advising the resident in the choice of a project that will be able to be completed in one year.
- Assist in the design and write-up and review of the protocol.

- Coordinate the contact of a statistician to review and advise in protocol design and determining the number of patients needed if applicable.
- Assist in obtaining IRB approval.
- Ensure that the resident is completing the project according to the program's timeline
- Assist with data collection. Of note most of the data collection will be performed by the resident.
- Guiding the data analysis and assisting in the preparation of the final manuscript.
- Report to the Residency Director, that the project has been completed, and the resident has fulfilled the project obligation of the program.

Paid time off (PTO), Holidays, Weekends

- **Sick/Paid Time Off:** See PTO policy 5100-1610.
- **Holidays:** Residents will work 1 major holiday group and 1 minor holiday per year. Major holiday groups include Group 1: Thanksgiving and Black Friday and Group 2: Christmas Eve and Christmas. Minor holidays include New Year's, Memorial Day, and Labor Day.
- **Weekends:** Over the 52-week program, residents will work ~14 clinical weekends.