

## MMC PGY2 Critical Care Pharmacy Residency Appendix 2023-2024

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CCRAC Membership: All PGY2 preceptors for required rotations, multidisciplinary (MDs, PA, RNs) ad hoc

### Program Structure

The program structure for required, elective, and longitudinal learning experiences is outlined in the table below. An orientation period of 2-3 weeks will begin the residency, and will be tailored to the resident's prior experiences.

<b>Rotations</b>	<b>Preceptor(s)</b>	<b>Typical Duration</b>
<i>Required Rotations</i>		
Cardiac ICU	Anne Andrie, MS, PharmD, BCCP	4 weeks
Cardiothoracic ICU	Colton Collier, PharmD, BCCCP	4 weeks
Emergency Medicine	Hannah Mazur, PharmD, BCCCP; Alexander Tito, PharmD, BCCCP	6 weeks
Infectious Diseases	Kristina Connolly, PharmD, BCIDP Nicholas Mercurio, PharmD, BCIDP	4 weeks
Medical ICU	Chelsea Wampole, PharmD, BCCCP	6 weeks
Neurocritical Care	David Gagnon, PharmD, BCCCP, FCCM Elizabeth Glisic, PharmD, BCCCP	6 weeks
Surgical Trauma ICU	Katie Smith, PharmD, BCPS, BCCCP Nathan Laliberte, BCCCP	6 weeks
<i>Elective Rotations</i>		
Advanced Emergency Medicine	Hannah Mazur, PharmD, BCCCP	2-4 weeks
Advanced Medical ICU	Chelsea Wampole, PharmD, BCCCP	2-4 weeks
Advanced Neurocritical Care	David Gagnon, PharmD, BCCCP, FCCM Elizabeth Glisic, PharmD, BCCCP	2-4 weeks
Advanced Surgical Trauma ICU	Katie Smith, PharmD, BCPS, BCCCP	2-4 weeks
Nutrition	Erica Corica, PharmD, BCNSP Paul Blakeslee, RD-AP, LD, CNSC	2 weeks
Pediatric ICU	Jessica Miller, PharmD, BCPS, BCPPS	2-4 weeks
Clinical Toxicology	Karen Simone, PharmD, DABAT, FAACT	2-4 weeks
Special populations (oncology, nutrition, transplant)	Megan Duperreault, PharmD, BCOP Erin Corica, PharmD, BCNSP Marizela Savic, PharmD, BCPS	1 week

<i>Longitudinal Learning Experiences</i>		
Service-Based Staffing Experience (Preceptor: Chelsea Wampole, PharmD, BCCCP)		
<ul style="list-style-type: none"> <li>• Staffing</li> <li>• Code blue response</li> </ul>		
Clinical Research and Medication Use Evaluation (Preceptor: David Gagnon, PharmD, BCCCP, FCCM)		
<ul style="list-style-type: none"> <li>• Clinical research project</li> <li>• Development of poster/platform presentation and manuscript</li> <li>• Medication use evaluation</li> </ul>		
Teaching and Effective Education (Preceptor: Katie Smith, PharmD, BCPS, BCCCP)		
<ul style="list-style-type: none"> <li>• College of Pharmacy didactics</li> <li>• Multidisciplinary presentations (see below for requirements)</li> <li>• Preceptorship of pharmacy students, PGY1 pharmacy residents, medical students through the Tufts University School of Medicine clinical pharmacology elective, or critical care APP residents on clinical pharmacology rotation</li> </ul>		
Committee Membership and Practice Management (Preceptors: Katie Smith, PharmD, BCPS, BCCCP; Kristina Connolly, PharmD, BCIDP; Chelsea Wampole, PharmD, BCCCP)		
<ul style="list-style-type: none"> <li>• Committee involvement</li> <li>• Guideline/Protocol development</li> <li>• Formulary drug review</li> <li>• Order Set Development</li> </ul>		
Resident Well-Being and Resilience (Preceptors: Nathan Laliberte, PharmD, BCCCP; Katie Smith, PharmD, BCPS, BCCCP)		
<ul style="list-style-type: none"> <li>• Monthly well-being sessions with co-residents</li> <li>• Community service events</li> </ul>		

### **Required Rotations**

Descriptions of the required learning experiences can be found in PharmAcademic. Required rotations in core areas (e.g. medical ICU, surgical trauma ICU) will be assigned in the first half of the year, while more specialized required ICU rotations (e.g. neurocritical care, cardiothoracic ICU) will occur in the second half of the year. The PGY2 resident will gain the skills to function as the primary ICU pharmacist during their required learning experiences with the expectation that the resident displays ownership of all aspects of the medication process (e.g. operational, distributive, clinical). The resident will build relationships in a multidisciplinary fashion to facilitate efficient workflow and medication delivery. Daily activities include, but are not limited to: participation in ICU rounds, code blue response, order verification, provision of drug information, and preceptorship of pharmacy students, medical students, APP residents, and/or PGY1 pharmacy residents. The integration of operational and clinical services prepares residents for various practice environments and develops essential skills for an advanced pharmacy practitioner.

### **Elective Rotations**

Descriptions of elective learning experiences can be found in PharmAcademic. Elective rotations may be tailored to the resident's interest and recognized areas for development. The rotations may be customized to the duration necessary for the resident, but typically range from 2 to 4 weeks. The elective learning experiences are scheduled in the second half of the residency year. New experiences may be created on a case-by-case basis if the resident has interest in a practice area not covered by the elective learning experiences in the table above.

### **Service-Based Staffing**

The resident's service commitment is two 12 hour shifts every 3-4 weekends. The resident's weekend service commitment will consist of service-based staffing in the emergency department or in the intensive care/intermediate care units. Staffing will be determined by resident interest and departmental needs. The resident will be assigned to staff four holidays throughout the residency year. The resident is assigned a code blue pager in the beginning of the residency year, and is expected to attend all code blues when staffing.

In order to provide more formative feedback, residents are expected to briefly meet with a preceptor following a staffing weekend to debrief and review interventions from the resident's weekend assignment. Documentation of this meeting and feedback will occur in PharmAcademic.

### **Clinical Research and Medication Use Evaluation**

The Residency Program Research Coordinator will supply the resident with a list of possible research projects to consider within the first two weeks of the residency. Project selection and CITI training should be completed prior to the end of the orientation experience. Research project methods may be presented at a neurocritical care research meeting for feedback and guidance prior to commencement of data collection, if deemed appropriate. Research project timeline will be determined by the Residency Program Research Coordinator, RPD, and resident. Residents will be expected to complete at least 1 research project each year. The results of the research project will be presented to a local, regional, or national meeting as appropriate. A completed manuscript will be submitted for the research project before graduation with the understanding that articles suitable for publication will require additional work that may occur after residency completion. Project weeks will be granted during the resident year. During these weeks, the resident is expected to be onsite, unless otherwise approved, for at least 8 hours daily, preferably between the hours of 0700 and 1800. A meeting will occur at the end of the project week with the Resident Program Research Coordinator and/or RPD to discuss progress and accomplishments during the project week. Documentation of resident productivity and details of projects and progress during their protected research time will be completed in PharmAcademic.

Each resident will complete at least one medication use evaluation (MUE). The resident will be provided with a list of potential MUE topics generated by the Residency Program Research Coordinator and CCRAC preceptors. The resident will be able to add to the list of ideas, if it is feasible within the year-long residency. The resident will conduct the MUE under the guidance of a preceptor. Results from MUE will be presented to the appropriate stakeholders within the hospital.

## **Teaching and Effective Education**

The resident will track their progress in effective education or training to health care professionals through this longitudinal experience. Education opportunities will be evaluated and will include pharmacy grand rounds (1 required), didactic lecture at University of New England (1 required), nursing in-services (2 required), critical care journal club (2 required), clinical pearl presentation at New England Critical Care Pharmacotherapy Symposium (1 required), surgical critical care weekly conference (1 required), and critical care medicine fellowship conference (1 required).

*Pharmacy grand rounds:* The resident will deliver a 1-hour continuing education lecture to the pharmacy staff regarding a topic in critical care. A mentor should be identified at least 8-12 weeks in advance of the presentation date. The title and objectives are typically due 6 weeks in advance of the presentation date, and assessment questions are due 4 weeks in advance of the presentation date. A draft of the grand rounds presentation should be delivered to the mentor at least 3 weeks prior to the presentation date. A practice presentation may be considered at least one week prior, if deemed necessary by resident and preceptor. An on-demand PharmAcademic evaluation will be used to track Grand Rounds completion.

*Didactic lecture at University of New England (UNE):* The resident will deliver at least one 1- or 2-hour didactic lecture to pharmacy students. This will be coordinated with faculty at UNE. The resident may also participate in the advanced cardiac life support (ACLS) simulation lab. An on-demand PharmAcademic evaluation will be used to track didactic lecture completion, and feedback from faculty and students will be attached.

*Nursing in-services:* The resident will give a moderate sedation in-service to critical care and emergency department nurses. This in-service typically takes place in the fall of the residency year. This is coordinated through the critical care clinical nursing educator. The resident will work with preceptors to identify another opportunity for a nursing in-service during the residency year. An on-demand PharmAcademic evaluation will be used to track nursing in-services, and feedback from nurses will be attached.

*Critical care journal club:* The critical care journal club occurs on a monthly basis on the second Tuesday of the month. The resident will present at least twice during the residency year. Journal club topics should focus on critically reviewing a recently published journal article related to critical care. The journal club presentation will be coordinated with the Residency Program Research Coordinator. The presentation is typically 20-30 minutes in duration and a one-page handout and/or powerpoint is required. An on-demand PharmAcademic evaluation will be used to track journal club presentations.

*Clinical pearl presentation at New England Critical Care Pharmacotherapy Symposium (NECCPS):* The resident will prepare a 5 minute clinical pearl on a unique topic related to critical care to be presented at the NECCPS. This is coordinated by faculty at Northeastern University, who set the deadlines for topic and presentation submissions. The symposium typically occurs in the fall of the residency year. At least one preceptor from the residency program is in attendance, and an on-demand PharmAcademic evaluation will be used to track the symposium presentation.

*Surgical Critical Care Conference:* The Surgical Critical Care Lecture Series occurs weekly on Tuesday from 1300-1400. The resident will present a topic related to critical care, typically scheduled in the spring. The presentation will be coordinated through the surgical critical care medical director and the critical care program coordinator. An on-

demand PharmAcademic evaluation will be used to track the surgical critical care conference presentation.

*Critical Care Medicine Fellowship Conference:* The resident will present to PCCM fellows at their weekly conference. The resident typically presents on pharmacokinetics and pharmacodynamics in the critically ill patient. The lecture usually takes place in the spring, and will be facilitated through the Residency Program Research Coordinator and the CCM program coordinator. An on-demand PharmAcademic evaluation will be used to track the PCCM fellowship conference lecture.

*Teaching certificate:* Participation in the Teaching Certificate Program is optional and will be discussed on a case-by-case basis.

The resident will co-precept at least two advanced practice pharmacy experience students, medical students, APP residents, or PGY1 pharmacy residents.

Finally, the resident's progress in covering disease states listed in the Critical Care Appendix will also be evaluated as part of this longitudinal learning experience. The appendix progress will be tracked in Smartsheet or Pharmacademic.

### **Committee Membership and Practice Management**

The resident will track their progress and development in the areas of practice management and formulary drug review, order set review, and/or treatment guideline development. Committee participation (e.g. code blue, critical care pharmacy team meetings, formulary subcommittee, pharmacy and therapeutics committee, antimicrobial stewardship committee) and practice management contributions (e.g. formulary drug review, order set review, and/or treatment guideline creation or revision) will be evaluated.

### **Meeting Attendance**

The residents may have the opportunity to attend various professional meetings throughout the year. The resident typically attends ASHP Midyear Meeting and Society of Critical Care Medicine as funding allows. Other meeting attendance may be discussed and reviewed on a case-by-case basis.

### **Evaluation Strategy**

The PGY2 Critical Care Pharmacy Residency Program utilizes the ASHP on-line evaluation tool called PharmAcademic.

Residents will complete two pre-residency questionnaires that help the RPD design a residency year that is tailored to the specific needs and interests of the resident:

- ASHP Entering Interests Form
- Entering Objective-Based Self-Evaluation Form

The RPD uses the ASHP Entering Interest Form and Entering Objective-Based Self-Evaluation form to create the resident's customized development plan. The Residency Graduation Requirement Checklist and Customized Development Plan will be discussed and modified (as necessary) through a collaborative effort between the RPD and resident. In addition, 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 RPD will share changes to the Residency Graduation Requirement Checklist and Customized Development Plan via Smartsheet automated emails to scheduled preceptors and during quarterly PGY2 Critical Care Residency Advisory Council (CCRAC) meetings.

Residents' schedules are entered into PharmAcademic. For each learning experience, the following assessments are completed:

Block or Learning Experiences of < 12 weeks				
Resident Evaluation of Learning Experience	Resident Evaluation of Preceptor	Preceptor Verbal Midpoint Evaluation of Resident	Preceptor Summative Evaluation of Resident	Resident Self-Summative Evaluation
End	End	Midpoint	End	End

Longitudinal Learning Experiences of > 12 weeks				
Resident Evaluation of Learning Experience	Resident Evaluation of Preceptor	Preceptor Summative Evaluation of Resident	Resident Self-Summative Evaluation	
End	End	Quarterly (or Midpoint and End)	Quarterly (or Midpoint and End)	

### Summative Evaluations

- Summative evaluations assess the residents' mastery of the 32 required ASHP residency objectives. Summative evaluations of these objectives will be completed by both preceptors and residents based on the following scale:

Short Description	Long Description	Value
1	1 Does not meet expectations: Unable to complete or perform the objective	1.00
2	2 Occasionally meets expectations: Completes or performs objective inconsistently or requires intervention to complete objectives	2.00
3	3 Meets expectations: Able to complete or perform objectives with minimal intervention	3.00
4	4 Occasionally exceeds expectations: Able to complete or perform objectives independently	4.00
5	5 Frequently exceeds expectations: Able to complete or perform objectives consistently and independently at a high level of practice	5.00
NA	Not assessed this rotation	

- Summative Evaluations should be completed using Criteria Based Feedback statements; see Power Point on PharmAcademic Tips and Tricks.
- Preceptors and residents should complete their own summative assessments, save, print a copy, and then meet to discuss/review together. Any changes to the evaluation should be made in PharmAcademic, then finalized and sent for 'Cosign'.
- Summative evaluations MUST be completed within 7 days of rotation completion.**
- Evaluations are cosigned by the rotation preceptor as well as the RPD. The RPD may send an evaluation back for revision for the following reasons:
  - Significant misspellings

- Patient names mentioned within document
- Criteria-based qualitative feedback statements not utilized
- Signing an evaluation (both preceptors AND residents) indicates that the evaluation has been read and discussed.

The resident will complete a PGY2 Critical Care Program Evaluation in the last month of residency. Feedback will be discussed at the PGY2 CCRAC meeting and agreed upon changes will be incorporated into the next academic year.

### **PGY2 Critical Care Competency Areas, Goals, and Objectives (2016 Standard):**

The resident is encouraged to read detailed information about the required competency areas and each goal and objective supplied by ASHP ([PGY2 Critical Care Pharmacy Residency Goals and Objectives \(ashp.org\)](http://www.ashp.org/PGY2-Critical-Care-Pharmacy-Residency-Goals-and-Objectives)). Below is a report generated by PharmAcademic to demonstrate the goals and objectives taught and evaluated in required learning experiences.

PharmAcademic®													
Goals and Objectives Taught and Evaluated in Learning Experiences													
Site: Maine Medical Center													
Program: PGY2 - Critical Care 12003													
Report Generated: 07/07/2021 01:54 PM													
Showing Required Learning Experiences	TE Count	Cardiac ICU	Cardiothoracic ICU	Clinical Research and Medication Use Evaluation - Longitudinal	Committee Membership and Practice Management - Longitudinal	Emergency Medicine	Infectious Diseases	Medical ICU	Neurocritical Care	Orientation	Service-Based Staffing Experience - Longitudinal	Surgical/Trauma ICU	Teaching and Effective Education - Longitudinal
<b>PGY2 Critical Care Required (2016)</b>													
<b>RI Patient Care</b>													
R1.1 In collaboration with the health care team, provide comprehensive medication													
R1.1.1 Interact effectively with health care teams to manage critically ill patients' medication therapy.	TE - 5					TE	TE	TE		TE	TE		
R1.1.2 Interact effectively with critically ill patients, family members, and caregivers.	TE - 3	TE				TE						TE	
R1.1.3 Collect information on which to base safe and effective medication therapy for critically ill patients.	TE - 4	TE	TE				TE		TE				
R1.1.4 Analyze and assess information on which to base safe and effective medication therapy for critically ill patients.	TE - 3					TE	TE			TE			
R1.1.5 Design, or redesign, safe and effective patient-centered therapeutic regimens and monitoring plans (care plans) for critically ill patients.	TE - 4	TE					TE		TE			TE	
R1.1.6 Ensure implementation of therapeutic regimens and monitoring plans (care plans) for critically ill patients by taking appropriate follow-up actions.	TE - 3						TE	TE					TE
R1.1.7 For critically ill patients, document direct patient care activities appropriately in the medical record, or where appropriate.	TE - 3					TE					TE		TE
R1.1.8 Demonstrate responsibility to critically ill patients for patient outcomes.	TE - 3		TE					TE				TE	
R1.2 Ensure continuity of care during transitions of critically ill patients between care													
R1.2.1 Manage transitions of care effectively for critically ill patients.	TE - 4	TE	TE			TE					TE		
R1.3 Manage and facilitate delivery of medications to support safe and effective drug													
R1.3.1 Facilitate delivery of medications for critically ill patients following best practices and local organization policies and procedures.	TE - 3							TE		TE	TE		
R1.3.2 Manage aspects of the medication-use process related to formulary management for critically ill patients.	TE - 3								TE	TE	TE		
R1.3.3 Facilitate aspects of the medication-use process for critically ill patients.	TE - 3					TE				TE	TE		
<b>R2 Advancing Practice and Improving Patient Care</b>													
R2.1 Demonstrate ability to manage formulary and medication-use processes for													
R2.1.1 Prepare or revise a drug class review, monograph, treatment guideline, or protocol related to care of critically ill patients, including proposals for medication-safety technology improvements.	TE - 1					TE							
R2.1.2 Participate in a medication-use evaluation related to care for critically ill patients.	TE - 1												
R2.1.3 Participate in the review of medication event reporting and monitoring related to care for critically ill patients.	TE - 7	TE	TE	TE		TE	TE		TE	TE		TE	
R2.1.4 Identify opportunities for improvement of the medication-use system related to care for critical care patients.	TE - 2			TE	TE								
R2.2 Demonstrate ability to conduct a quality improvement or research project.													
R2.2.1 Identify and/or demonstrate understanding of a specific project topic to improve care of critically ill patients or a topic for advancing the pharmacy profession or critical care pharmacy.	TE - 1			TE									
R2.2.2 Develop a plan or research protocol for a practice quality improvement or research project for the care of critically ill patients or a topic for advancing the pharmacy profession or critical care pharmacy.	TE - 1			TE									
R2.2.3 Collect and evaluate data for a practice quality improvement or research project for the care of critically ill patients or a topic for advancing the pharmacy profession or critical care pharmacy.	TE - 1			TE									
R2.2.4 Implement a quality improvement or research project to improve care of critically ill patients or a topic for advancing the pharmacy profession or critical care pharmacy.	TE - 1			TE									
R2.2.5 Assess changes or need to make changes to improve care for critical care patients or a topic for advancing the pharmacy profession or critical care pharmacy.	TE - 1			TE									
R2.2.6 Effectively develop and present, orally and in writing, a final project or research report suitable for publication related to care for critically ill patients or for a topic related to advancing the pharmacy profession or critical care pharmacy at a local, regional, or national conference. (The presentation can be virtual.)	TE - 1			TE									
<b>R3 Leadership and Management</b>													
R3.1 Demonstrate leadership skills for successful self-development in the provision of													
R3.1.1 Demonstrate personal, interpersonal, and teamwork skills critical for effective leadership in the provision of care for critically ill patients.	TE - 3	TE				TE	TE						
R3.1.2 Apply a process of ongoing self-evaluation and personal performance improvement in the provision of care for critically ill patients.	TE - 3		TE					TE	TE				
R3.2 Demonstrate management skills in the provision of care for critically ill patients.													
R3.2.1 Contribute to critical care pharmacy departmental management.	TE - 1					TE							
R3.2.2 Manage one's own critical care practice effectively.	TE - 2							TE			TE		
<b>R4 Teaching, Education, and Dissemination of Knowledge</b>													
R4.1 Provide effective medication and practice-related education to critically ill patients.													
R4.1.1 Design effective educational activities related to critical care pharmacy.	TE - 1												TE
R4.1.2 Use effective presentation and teaching skills to deliver education related to critical care pharmacy.	TE - 1												TE
R4.1.3 Use effective written communication to disseminate knowledge related to critical care pharmacy.	TE - 3		TE						TE				TE
R4.1.4 Appropriately assess effectiveness of education related to critical care pharmacy.	TE - 1												TE
R4.2 Effectively employ appropriate preceptor roles when engaged in teaching students.													
R4.2.1 When engaged in teaching related to critical care, select a preceptor role that meets learners' educational needs.	TE - 5		TE			TE		TE	TE			TE	
R4.2.2 Effectively employ preceptor roles, as appropriate, when instructing, modeling, coaching, or facilitating skills related to critical care.	TE - 5		TE			TE		TE	TE			TE	

### **PGY2 Critical Care Residency Requirements for Completion/Graduation:**

- Objective achievement:  $\geq 90\%$  of program-required objectives are marked as "Achieved for Residency" by the end of the residency year (see criteria for achievement of objectives in shared residency manual under "Development Plan")
- Completion of all required learning experiences

- Completion of all assigned evaluations in PharmAcademic
- Completion of medication use evaluation and presentation at an appropriate committee meeting or to key stakeholders
- Completion of all assigned presentations:
  - Pharmacy grand rounds (1 required)
  - Didactic lecture at University of New England (1 required)
  - Nursing in-services (2 required)
  - Critical care journal club (2 required)
  - Clinical pearl presentation at New England Critical Care Pharmacotherapy Symposium (1 required)
  - Surgical critical care weekly conference (1 required)
  - Critical care medicine fellowship conference (1 required)
- Completion of formulary drug review and/or develop/revise treatment guideline/protocol and presentation at an appropriate committee meeting
- Presentation of major research project at residency conference and/or other professional platform (e.g. national meeting, MSHP, Pharmacy Grand Rounds)
- Completion of manuscript of major project in publishable form, signed off by residency program research coordinator
- Submission of 15 reports in safety reporting system (e.g. safety, adverse drug reports)
- Completion of required patient care topic discussions per PGY2 Critical Care Topic Appendix
- Completion of all assigned staffing shifts
- Completion of all attendance related and duty hour fulfillment and reporting requirements
- Submission of residency portfolio: Upload all projects, presentations, work products to Smartsheet