Henry Ford Macomb Hospital
Pharmacy Residencies
Resident Handbook
2024-25

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About the PGY1 Pharmacy Residency and PGY2 Critical Care Programs

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ASHP Accreditation Status:

- PGY1 Pharmacy Residency: Accredited
- PGY2 Critical Care: Candidate Status

Number of Positions:

- PGY1 Pharmacy Residency: 2
- PGY2 Critical Care: 1

Introduction

The Henry Ford Macomb Pharmacy Residency Programs for PGY1 Pharmacy Residency and PGY2 Critical Care are twelve-month experiences designed to develop competent and confident practitioners. A combination of clinical and longitudinal experiences will provide opportunities to independently optimize pharmacotherapy and implement pharmaceutical care. Pharmacists are unit-based and are an essential component of the multi-disciplinary transitions of care process, in addition to many patient care areas. The department serves as a teaching site for pharmacy students and is affiliated with Wayne State University.

Program Purposes

The PGY1 Pharmacy Residency Program builds on Doctor of Pharmacy (Pharm.D.) education and aims to develop pharmacist practitioners with knowledge, skills and abilities as defined in the ASHP educational competency areas, goals, and objectives. Residents who complete a PGY1 Pharmacy Residency will be skilled in diverse patient care, practice management, leadership, and education and will be prepared to provide comprehensive patient care, seek board certification in pharmacotherapy (BCPS) and pursue advanced education and training opportunities including PGY2 residencies.

The PGY2 Critical Care Program continues to build on the foundation laid in PGY1 training and aims to develop the resident in practicing in critical care. The PGY2 Critical Care Residency provides residents with opportunities to function independently as practitioners by conceptualizing and integrating accumulated experience and knowledge and incorporating both into the provision of patient care or other advanced practice settings. Residents who successfully complete an accredited PGY2 pharmacy residency are prepared for advanced patient care, academic, or other specialized positions, along with board certification, if available.

Residency Experience

Pharmacists completing a Henry Ford Macomb Hospital Pharmacy Residency experience will be competent practitioners able to provide direct patient care at a level beyond that of a practitioner without postgraduate

training. These individuals will further develop and enhance their personal and professional skills as they seek positions as clinical/staff pharmacists.

Licensure Requirements

Residents are strongly encouraged to become fully licensed to practice pharmacy in the state of Michigan within 90 days of the start of the residency. Failure to obtain licensure within 120 days of the start date will result in dismissal from the program.

Residency Advisory Committee (RAC)

The RAC is comprised of all preceptors involved in both residency programs. Staff members who previously completed a residency are invited to attend. The RAC guides the overall program by creating a setting to discuss resident progress, projects, concerns/issues, and any other components of the program.

Minimum Responsibilities and Functions

- Discusses the incoming residents' interests, strengths, and professional/personal goals
- Discusses resident performance of assigned learning experiences
- Establishes preceptor responsibilities and preceptor development initiatives
- Discusses overall performance of the residents and identifies any areas for improvement
- Continuously evaluates all aspects of the program
- Discusses resident recruitment and selection
- Conducts corrective actions and dismissals, as necessary
- Maintains, reviews, and approves annual Residency Handbook
- Meets at least every other month (or more frequently as needed)
- Minutes will be prepared by RPD or designee

Resident Wellbeing

Henry Ford Macomb considers a resident's wellbeing and resilience an important aspect of the residency experience. Wellbeing and resilience are assessed at each RAC meeting and addressed formally during resident quarterly evaluations. Residents are required to choose a residency mentor at the beginning of the year and are highly encouraged to have open conversations about wellbeing with that individual. In addition, residents will be assigned Henry Ford Health University Modules on wellbeing, such as 'Improve Your Mental Wellness", "Workplace Wellness That Works", and "Self -Assess your Mental Wellness" throughout the course of the year.

Additionally, Employee Assistance Programs (EAP) is a benefit provided by HFHS free of charge to support and assist its employees when they are faced with personal problems. Employees are encouraged to seek the services of the EAP voluntarily, before job performance problems are exhibited.

If the EAP representative determines that more in-depth treatment or service is indicated, the EAP may refer the employee to an appropriate outside provider. Employees will be responsible for any treatment, service, or physician's fees, although certain benefit plans may cover some of these costs. See specific employee benefits policies or contact Human Resources. The EAP representative should explain benefit coverage should an outside referral become necessary.

The Henry Ford Health ENHANCE Wellness Resource Page (https://www.henryford.com/services/enhance/new-customers/eap/expect/wellness-resources) offers av variety of resources including workshops, web pages, and a quarterly newsletter, They focus on caregiver burnout, depression and anxiety, relationship and family issues, stress management and substance abuse. The workshops available are:

- The Art of Relaxation
- Stress Management
- Managing Change
- Time Management
- Diversity
- Effective Communication
- Conflict Resolution
- Dealing with Negativity
- Anger Management
- Grief

Duty Hours / Outside Work

Duty Hours

Duty hours are defined as all scheduled clinical and academic activities related to the pharmacy residency program. This includes inpatient and outpatient care, in-house call, administrative duties, scheduled and assigned activities, such as conferences, committee meetings, and health fairs that are required to meet the goals and objectives of the residency program.

Duty hours do not include reading, studying, and academic preparation time for presentations, journal clubs; or travel time to and from conferences; and hours that are not scheduled by the residency program director or preceptor.

Resident Duty Hours must be fully attested for at the end of each month in PharmAcademic. The RPD/RPC will evaluate these hours and evaluate whether adjustments need to be implemented.

- Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities and all moonlighting.

- Mandatory time free of duty: residents must have a minimum of one day in seven days free of duty (when averaged over four weeks).
- Residents must have a minimum of 8 hours between scheduled duty periods.
- Maximum length: continuous duty periods of residents should not exceed 16 hours
- All pharmacy staff are continuously responsible to report to the RPD/designee any instances in which the resident may seem to have impaired judgment or to be excessively fatigued. The RPD/designee will determine at that time what follow-up is needed.

The ASHP policy on Duty Hours can be found at https://www.ashp.org/-/media/assets/professional-development/residencies/docs/duty-hour-requirements.ashx

Outside Work

Moonlighting: Voluntary, compensated, pharmacy-related work performed outside the organization (external), or within the organization where the resident is in training (internal), or at any of its related participating sites. These are compensated hours beyond the resident's salary and are not part of the scheduled duty periods of the residency program.

Moonlighting (internal or external) is permitted, but not encouraged. Moonlighting must not interfere with the ability of the resident to achieve the educational goals and objectives of the residency program. Any moonlighting must be counted towards the 80-hour maximum total duty hours (see above) and will not exceed a maximum of 12 hours per week.

Internal Moonlighting – Reporting Hours

- Internal moonlighting hours worked by a resident will be monitored during the biweekly payroll process and entered into the online scheduling system.

External Moonlighting – Reporting Hours

- Residents moonlighting outside of Henry Ford Macomb Hospital (community pharmacy, another hospital) MUST disclose the place of employment to the RPD/designee via email at the start of the residency program or upon acceptance of outside employment. The resident is responsible for reporting total external moonlighting hours each month to the RPD/designee via email. The RPD/designee will use this information to ensure duty hour compliance.

When an RPD/designee is aware of resident moonlighting, he/she will ensure that discussion of the potential impact of moonlighting on resident performance is part of the review of each resident at the PGY1 Residency Advisory Committee (RAC) meetings. If moonlighting impacts performance, the RAC will determine whether internal/external moonlighting hours should be limited for the resident. If the resident refuses to abide by the RAC's recommendation to reduce moonlighting hours, the RAC will internally discuss whether to approach the resident with voluntary resignation. This will depend upon the severity of the impact moonlighting is having on the resident's performance.

Time Away / Leave of Absence / Residency Extension

Time Away

Residents training in the Henry Ford Macomb Hospital Pharmacy Residency Programs are allowed up to 23 days away from the program; however, no more than 3 days may be taken on an individual rotation, unless discussed with the preceptor and Residency Program Director (RPD)/designee. Included in these 23 days are 8 days total for required professional meetings (Midyear and Great Lakes Residency Conference). The remaining 15 days are used for illness, personal reasons, holidays, interviews, and professional meetings not required by the residency program. Once a rotation begins, residents are discouraged from requesting time off. They are encouraged to request time off at least 3 weeks prior to the requested date. Sick days and/or emergencies are exclusions. More than 3 days of vacation is not allowed in the month of June and vacation days cannot be used to shorten the residency. An additional 14 days may be added at the discretion of the RAC for extenuating circumstances, such as bereavement, military leave, extreme illness or jury duty. The total number of days away may not exceed 37 days.

All days away from the program **must** be approved by both the rotation preceptor and the RPD and/or designee. The preceptor should be contacted FIRST regarding potential days off. Once the preceptor approves, the RPD/designee should be contacted for final approval. The RPD/designee will notify the resident if the time off is approved or denied. The RPD/designee will record these days off on a spreadsheet. Failure to comply with any of these guidelines will result in a denied request. Any resident who misses an assigned shift without approval will be subject to loss of an additional vacation day (above and beyond the day they were not present) or will be made to work an additional shift on a weekend as compensation to the department.

In the case of an acute illness/emergency:

- Monday-Friday: resident must contact the RPD/designee AND preceptor directly (phone call/text)
- Saturday-Sunday: resident must contact a pharmacist within the main pharmacy (phone call).
- If time off is emergently requested on a weekend for a day in the upcoming week, the RPD/Designee AND preceptor must be notified via text/phone call.

Leave of Absence and Residency Extension

If a resident requests a leave of absence due to illness and/or personal reasons, the resident will work with the RPD/designee and Director of Pharmacy (DOP) to determine the length of the leave of absence. Permission will be granted on a case-by-case basis at the discretion of the RPD/designee, RAC and DOP. A leave of absence is not guaranteed depending upon the situation and may not exceed 30 days. The resident will then have the same amount of time missed (not exceeding 30 days) extended to the end of the residency to complete their responsibilities. If a leave is granted, the resident will continue to be paid at their normal rate and will maintain insurance benefits until the residency is completed. If a resident is unable to complete any portion of his/her responsibilities, a residency certificate will not be awarded.

Early commit PGY2 residents are eligible for FMLA after working for Henry Ford Health for 52 weeks. For more information, refer to the Tier 1: Leave of Absence Policy.

Remediation Process

If resident performance issues are identified, the preceptor will present their concerns to the RAC. Performance issues may include:

- Cognitive issues, such as knowledge base
- Behavioral issues, such as consistently unable to meet deadlines, difficulty with professionalism `or interpersonal communication, or tardiness
- An NI on a rotation evaluation, defined as "The resident is not performing at the level expected at this point in their residency experience. Significant improvement is needed. NI can only be assigned by the Residency Advisory Committee and not by any individual preceptor."

If the RAC agrees that remediation is required, the RPD/RPC will have an open discussion with the resident about the identified issue and potential contributing factors. If an intervention is deemed appropriate, a remediation plan will be put into place. If the primary issue is cognitive, traditional instructional methods such as direct instruction, modeling, and coaching will be used. If the issue is behavioral, close monitoring and feedback of attitude and interpersonal behaviors will be implemented. For more in-depth personal issues, the resident may be referred to EAP. A remediation plan will be made specifically for the resident and will include specific goals, objectives, and timelines. Upon successful completion of the remediation plan, documentation will be filed in PharmAcademic. If the resident does not successfully complete the remediation plan within the designated timeline, the deadlines may be extended. However, if the situation has not improved or worsened, the RAC may consider formal disciplinary action.

Disciplinary Action Process and Grounds for Dismissal

Formal Disciplinary Action Process

The formal disciplinary action process will be utilized if a resident inadequately performs his/her obligations and/or responsibilities necessary to successfully complete the program. This includes, but is not limited to, unsuccessful completion of a remediation plan, as well as failure to adhere to any Henry Ford Health clinical or operational policies (hospital, pharmacy, and residency). The formal disciplinary process follows the same remediation process as described above with the additional step of involving Human Resources. If the resident does not successfully complete the formal disciplinary plan, the timeline deadlines may be extended or may lead to dismissal.

Grounds for Resident Dismissal

A resident may be dismissed from the program by performing any of the actions below. The RAC will discuss the situation and utilize the criteria below to determine a resident's dismissal status.

I. Resident places a patient, employee, or any other individual in danger either knowingly or by

negligence.

II. Resident utilizes threats or violence against any individual in the hospital.

III. Resident sexually harasses any individual.

IV. Plagiarism.

V. Unexcused absences (i.e. absences without notifying preceptor and RPD/designee) beyond the allotted days off.

VI. Excessive tardiness without prior permission.

VII. Falsification of documents.

VIII. Utilization of alcohol and/or illegal/recreational substances that interferes with their responsibilities and obligation to perform professional, responsible, and safe work.

IX. Failure to comply with any element of the Henry Ford Health System Code of Conduct.

PGY1 Pharmacy Residency Program Policies:

Resident Qualifications

Eligible candidates for the PGY1 Pharmacy Residency Program must:

- Attain a Doctor of Pharmacy degree from an accredited college of pharmacy, or B.S. from an accredited college of pharmacy with equivalent clinical experience
- Have current pharmacy license or eligibility for licensure in the state of Michigan
- Able to start program at the end of June

Program Structure

The PGY1 Pharmacy Residency program's structure is outlined in the table below. All rotations are required. Learning experience sequencing takes into account the residents' entering interests. This is intended to assist the residents in defining their areas of interest as well as evaluate what opportunities to seek at the Midyear Clinical meeting. The learning experiences may change throughout the course of the residency year as long as it is in the best interest of the residents and program.

- Residents are considered employees of Henry Ford Health and are subject to the same policies and conditions of employment as employed staff.
- Residents will spend 2/3 or more of the program as a licensed pharmacist (35 weeks).
- No more than 1/3 of the 12-month PGY1 program will deal with a patient specific disease state and population (e.g., critical care, oncology).
- Residents will spend 2/3 or more of program in direct patient care activities. Rotations may require residents to work the afternoon shift (i.e., not all rotation shifts will be "days").
- Preceptors will discuss each entering resident's "Entering Interests and Goals" prior to the resident's start date. This discussion will be used to develop the resident's rotational schedule and initial development plan.

Rotation	Learning Experience Type	Length
Orientation to Pharmacy Operations and Clinical Practice	Rotation	8 weeks
Antimicrobial Stewardship	Rotation	4 weeks
Cardiology	Rotation	4 weeks
Emergency Medicine	Rotation	4 weeks
Internal Medicine	Rotation	4 weeks
Medical Intensive Care	Rotation	4 weeks
Medication Safety	Rotation	4 weeks

Oncology	Rotation	4 weeks
Pharmacy Management	Rotation	4 weeks
Project / Staffing	Rotation	4 weeks
Surgical Intensive Care	Rotation	4 weeks
Independent Practice	Rotation	3 weeks
Drug Information and Pharmacy Education	Longitudinal	12 months
Pharmacy Operations/Staffing (see below for full staffing requirements)	Longitudinal	12 months
Staffing/Great Lakes Pharmacy Residency Conference	Not evaluated rotation	2 weeks

Resident Staffing Requirements

Residents training in the Henry Ford Macomb PGY1 Pharmacy Residency Program are required to complete a pharmacy practice component. This practice component, also known as "staffing," allows residents to gain proficiency in distribution skills, clinical services, operations, and policies and procedures. The guidelines for staffing are listed below.

General Staffing Requirements

- Residents will not be pulled from rotation to fill staffing voids, **whenever possible**. In an urgent or emergent situation, residents may be asked to help until the void has been filled. Any movement of a resident from a rotation day to staffing requires approval by the RPD or RPC. This may occur up to two times on a specific rotation. If the resident is to be pulled from rotation for more than two days (in total across the rotation, not necessarily in succession) the RAC must grant approval.
- Residents cannot staff the ED or ICU PCAPs alone until they have completed their ED/ICU rotations and the RAC has approved them to work these areas alone.
- The RAC will begin evaluating a resident's ability to work independently in September. The committee will assess resident's licensure status, as well as their PK/Dosing and operational competencies. Once designated as "independent" by the RAC, the resident may be assigned specific shifts according to the guidelines stated below.
- Staffing hours missed due to sickness must be made up at the discretion of the RAC.

Weekend Staffing

- Residents are required to staff every third weekend in addition to their normal rotations. This weekend staffing requirement will begin immediately after they've completed their operational training. Efforts will be made to keep the number of weekend afternoon shifts between the residents as close as possible over the course of the year, but it is impossible to get these numbers to be exact.
- Residents may work any weekend shift under the guidance of another staff pharmacist (e.g., a resident who has not completed their ED rotation may work a shift under the direct supervision of an ED Pharmacist).
- Residents will not do weekend dosing or AM4 alone until approved to do so by the RAC.
- Residents will not staff the weekend that starts the ASHP midyear. (This starts on the Saturday preceding midyear week) All residents will be given this time to travel.

Weekday Afternoon Staffing

- Residents are required to staff one afternoon shift every other week between the hours of 4-9 pm in addition to their normal rotations. This shift is routinely scheduled for Tuesday/Wednesday evenings but can be adjusted by the department Ops specialist/manager based on staffing needs. Any changes in this schedule must be approved by the department Ops specialist/manager at least one week in advance.
- At the beginning of the residency, residents will be responsible for ALL new dosing consults while working their afternoon shifts. They should alert PCAP pharmacists at the beginning of the shift that they are available for these consults.
- After the RAC approves a resident to dose independently, that resident may be assigned to actually staff a PCAP on this afternoon weekday shift (if needed).
- Residents will be exempt from their assigned afternoon staffing during the month of December and during the 1 to 2-week staffing in April (see below) in order to avoid conflicts with midyear/Great Lakes. However, residents may be assigned to work an afternoon shift like any staff pharmacist.
- Residents will also be exempt from their assigned afternoon staffing during the final 2 weeks of the residency.

"Additional" Staffing

In addition to every third weekend and every other Tuesday/Wednesday evening, the residents will complete an additional 1-2 weeks of staffing with a focus on operations during the second half of the residency (i.e., from January-June. This will usually be scheduled in April after Great Lakes but may vary as needed). The purpose of this exposure is to allow the resident to gain a better understanding of and appreciation for certain operational procedures (i.e., cartfill, IV batching, label printing, etc.) to thoroughly comprehend overall pharmacy workflow.

Holiday Staffing

Residents are required to assist with holiday coverage during the residency year. The residents will be assigned two of the following four holidays at the beginning of the residency: Thanksgiving Day, Christmas Day, New Year's Day, and Memorial Day. Residents are free to trade holidays amongst themselves if they wish.

Midnight Staffing

The residents will work primarily day and afternoon shifts except for two midnight shifts during the course of the year. The midnight shifts will be assigned when the resident is not on a clinical rotation and will most commonly be during the December staffing month, during the "Additional Staffing" week in April/May or in the final month of residency depending upon department need.

Staffing/Project Month (December)

During the month of December, residents will be expected to work on-line for approximately 50% of their 8-hour shifts from the Friday after midyear until the beginning of their next clinical rotation. Staffing and Project days will be scheduled according to departmental needs. In other words, the days can be intermixed OR the resident may be given 6 straight project days followed by 6 straight staffing days ("depending upon department need"). Two midnight shifts may be scheduled at this time. Refer to "Midnight Staffing" section above for details.

Requirements for Successful Completion of PGY1 Pharmacy Residency

In order to receive a residency certificate signifying successful completion of the residency, residents must obtain ACH-R in the items listed below.

R1.1.1 – (Analyzing) Collect relevant subjective and objective information about the patient.
R1.1.2 – (Evaluating) Assess clinical information collected and analyze its impact on the patient's overall health goals.
R1.1.3 – (Creating) Develop evidence-based, cost effective, and comprehensive patient-centered care plans.
R1.1.4 – (Applying) Implement care plans.
R1.3.3 – (Evaluating) Manage the process for preparing, dispensing, and administering (when appropriate) medications.
R2.1.2– (Creating) Develop a project plan.
-This will include:

- Medication Use Evaluation (MUE)
- Longitudinal Operations (Ops) project
- Longitudinal Project with preparation of a manuscript in a journal-specific format

R.3.2.2 – (Applying) Demonstrate personal and interpersonal skills to manage entrusted responsibilities.
R4.1.1 – (Creating) Construct educational activities for the target audience.
-This will include:

- Presentation of an accredited continuing education (CE) for staff

By the end of residency, residents must have obtained either "Satisfactory Progress" (SP), "Achieved" (ACH), or "Achieved for Residency" (ACH-R) on all Learning Objectives. If a resident has a "Needs Improvement" (NI) on any goal or objective, he/she must repeat it and obtain a SP, ACH, ACH-R on that particular goal or objective by the end of the residency year. The RPD/designee(s) will review the residents' progress throughout the year to ensure the resident is on track to obtain a certificate.

The following definitions will be used in evaluating resident progress:

Needs Improvement (NI) – The resident is not performing at the level expected at this point in their residency experience. Significant improvement is needed. NI can only be assigned by the Residency Advisory Committee and not by any individual preceptor.

Satisfactory Progress (SP) – The resident's performance is adequate; however, they require additional experience to perform the objective independently.

Achieved (ACH) – The resident's performance is adequate and they can perform the objective independently.

Achieved for Residency (ACH-R) – The resident's performance is consistently above adequate and they can consistently perform the objective independently. ACH-R can only be assigned by the Residency Advisory Committee and not by any individual preceptor.

Additional Expectations for the PGY1 Pharmacy Residency

In addition, the resident is expected to complete the following list of activities as part of the Henry Ford Macomb Hospital PGY1 Pharmacy Residency Program. Uncompleted expectations may be allowed, if approved by the RAC secondary to unforeseen circumstances.

- At least 10 transition of care (TOC) consults
- At least 15 Outpatient Parenteral Antibiotic Therapy (OPAT) consults
- At least 5 medication histories per week (230/year. Excludes elective surgery patients, Rehab, and LDRP)
- Order verification total of at least 7,000 orders throughout the year
- 4 scheduled presentations
- 10 hours of community service/participation

- Medication Use Evaluation (MUE) presented at ASHP Midyear (travel expenses are covered including conference registration, airfare, lodging, parking, and $75/day for food)
- Attendance and presentation of longitudinal project at Great Lakes Pharmacy Resident Conference (travel expenses are covered including conference registration, mileage, lodging, parking, and $75/day for food)
- Complete a drug formulary monograph for system review
- ACLS/BLS/PALS training – to be completed at HFHS prior to the start of the residency
- Resident Scavenger Hunt (with other system residents)
- Precepting P3/P4 pharmacy students
- A 30-minute CE presented at the system level
- Participation at 75% of all Journal Club meetings, including leading 3 Journal Club discussions
- Planning and oversight of Pharmacy Week activities
- Teaching Certificate

PGY2 Critical Care Program Policies:

Resident Qualifications

Eligible candidates for the PGY2 Critical Care Pharmacy Residency Program must:

- Attain a Doctor of Pharmacy degree from an accredited college of pharmacy, or B.S. from an accredited college of pharmacy with equivalent clinical experience
- Complete an accredited or candidate status ASHP PGY1 pharmacy residency (confirmed through receiving a copy of the residents PGY1 certificate or from the PGY1 program RPD within 30 days of expected completion)
    - Resident who failed to successfully complete their PGY1 residency will be dismissed from the PGY2 critical care residency
- Have current pharmacy license or eligibility for licensure in the state of Michigan
- Able to start the program by the second week of July

Program Structure

The PGY2 Critical Care Pharmacy Residency program's structure is outlined in the table below. All rotations are required. The learning experiences may change throughout the course of the residency year as long as it is in the best interest of the residents and program.
The residents may be required to work the "afternoon" shift depending on the rotation (i.e., most rotations will occur on the "day" shift, however the emergency medicine experience lends itself to working varying shifts)

Rotation	Learning Experience Type	Length
Orientation to Pharmacy Operations and Clinical Practice	Rotation	6 weeks
Antimicrobial Stewardship (Critical Care Focus)	Rotation	4 weeks
Cardiac Intensive Care (Henry Ford Hospital Detroit Campus)	Rotation	4 weeks
Emergency Medicine I	Rotation	4 weeks
Emergency Medicine I	Rotation	4 weeks
Medical Intensive Care I	Rotation	4 weeks
Medical Intensive Care II	Rotation	6 weeks
Neurosurgical Intensive Care (Henry Ford Hospital Detroit Campus)	Rotation	4 weeks
Cardiovascular Surgery and Trauma Intensive Care I	Rotation	4 weeks
Cardiovascular Surgery and Trauma Intensive Care II	Rotation	4 weeks

Project / Staffing	Rotation	4 weeks
Independent Practice	Rotation	4 weeks
Drug Information and Pharmacy Education	Longitudinal	
Research Project	Longitudinal	
Clinical Staffing	Longitudinal	
Journal Club	Longitudinal	

Resident Staffing Requirements

The resident training in the Henry Ford Macomb PGY2 Critical Care Pharmacy Residency Program is required to complete a pharmacy practice component. This practice component, also known as staffing, allows residents to gain proficiency in distribution skills, clinical services, operations, and policies and procedures. The guidelines for staffing are listed below. The resident is required to staff every third weekend in addition to their normal rotations. Weekend shifts will occur in either an intensive care or emergency medicine setting depending on past experience and rotation exposure. Weekend shifts may be either days or afternoons depending on the practice setting and will begin immediately after the orientation period ends. The PGY2 resident will be scheduled to staff with an experienced pharmacist on weekends at the beginning of residency. After multiple weekends staffing with an experienced pharmacist the RAC will discuss and approve the ability for the PGY2 resident to staff independently on weekends. This timing may vary based on the resident's prior experience and comfort level of the RAC. The resident have the ability to reach out to an experienced preceptor for any clarification on weekend staffing shifts throughout the year if unusual or uncommon patient scenarios arise.

- The weekend and afternoon shift practice experience options include the intensive care and emergency department settings
- The resident will staff on 2 holidays: Thanksgiving and Memorial Day. Residents are free to trade their assigned holidays with pharmacists who are trained to work in the area assigned (i.e. ED or ICU). The resident must pick up a different holiday in return.
- The Critical Care PGY2 will be placed in either an intensive care unit or emergency department setting for their designated holiday shifts based on departmental need and the resident's previous rotation exposure
- The resident may moonlight internally and will be compensated at a standard pharmacist rate, including shift differential if applicable. The resident is reminded of their obligation to the residency program and to notify the RPD of any moonlighting.
- The resident will work primarily "day" shifts
- Exceptions:

- The resident will work varying shifts between days and afternoons during the emergency medicine rotations at the discretion of the primary preceptor for that rotation
- 2 midnight shifts will take place in the emergency department on each of the two required emergency medicine rotations

The resident will not be pulled from rotation to fill staffing voids, **whenever possible**. In an urgent or emergent situation, residents may be asked to help until the void has been filled.

Requirements for the Successful Completion of the PGY2 Critical Care Pharmacy Residency

By the end of residency, residents must have obtained either "Satisfactory Progress" (SP), "Achieved" (ACH), or "Achieved for Residency" (ACH-R) on all Learning Objectives. If a resident has a "Needs Improvement" (NI) on any goal or objective, he/she must repeat it and obtain a SP, ACH, ACH-R on that particular goal or objective by the end of the residency year. The RPD/designee(s) will review the residents' progress throughout the year to ensure the resident is on track to obtain a certificate.

In order to receive a residency certificate signifying successful completion of the residency, residents must also obtain ACH-R in the items listed below.

R1.1.3 – Collect information on which to base safe and effective medication therapy for critically ill patients
R1.1.4 – Analyze and assess information on which to base safe and effective medication therapy for critically ill patients
R1.1.5 – Design, or redesign, safe and effective patient-centered therapeutic regimens and monitoring plans (care plans) for critically ill patients
R1.1.6 – Ensure implementation of therapeutic regimens and monitoring plans (care plans) for critically ill patients by taking appropriate follow-up actions
R1.1.8 – Demonstrate responsibility to critically ill patients for patient outcomes
-This will include:

- At least 5 transition of care (TOC) consults
- At least 10 Outpatient Parenteral Antibiotic Therapy (OPAT) consults
- At least 115 medications histories over the course of the year
- Order verification total of at least 7,000 orders over the course of the year

R1.3.3 – Facilitate aspects of the medication-use process for critically ill patients
- This will include:

- Completion of a longitudinal research project along with the preparation of a manuscript in a journal-specific format
- Presentation of any relevant information to pertinent hospital/health system committees

R.3.2.2 – Manage one's own critical care practice effectively
- This will include:

- Review and completion of disease state topics listed in Appendix A

R4.1.1 – Design effective educational activities related to critical care pharmacy
R4.2.1 – When engaged in teaching related to critical care, select a preceptor role that meets learners' educational needs
-This will include:

- Presentation of an accredited continuing education (CE) for staff

R4.2.2 – Effectively employ preceptor roles, as appropriate, when instructing, modeling, coaching, or facilitating skills related to critical care
-This will include:

Precepting PGY1 residents on the completion of their medication use evaluation (MUE)

Additional Expectations for the PGY2 Critical Care Pharmacy Residency

In addition, the resident is expected to complete the following list of activities as part of the Henry Ford Macomb Hospital PGY2 Critical Care Pharmacy Residency Program. Uncompleted expectations may be allowed, if approved by the RAC secondary to unforeseen circumstances.

- 10 hours of community service/participation
- Medication Use Evaluation (MUE) presented at ASHP Midyear (travel expenses are covered including conference registration, airfare, lodging, parking, and $75/day for food)
- Attendance and presentation of longitudinal project at Great Lakes Pharmacy Resident Conference (travel expenses are covered including conference registration, mileage, lodging, parking, and $75/day for food)
- Complete a drug formulary monograph/policy/guideline/protocol for system review
- ACLS/BLS/PALS training – to be completed at HFHS prior to the start of the residency
- Resident Scavenger Hunt (with other system residents)
- Precepting P3/P4 pharmacy students
- Precepting PGY1 pharmacy residents
- Participation at 75% of all Journal Club meetings, including leading 3 Journal Club discussions
- Planning and oversight of Pharmacy Week activities
- Teaching Certificate if not completed as a PGY1

Appendix A: Disease States to be Reviewed

The resident will demonstrate an understanding of the mechanism of action, pharmacokinetics, pharmacodynamics, pharmacogenomics, pharmacoeconomics, usual regimen (dose, schedule, form, route, and method of administration), indications, contraindications, interactions, adverse reactions, and therapeutics of medications and non-traditional therapies, where relevant, that are applicable to the diseases and conditions and have the ability to design appropriate treatment regimens and treat and assess outcomes.

For some diseases and conditions, direct patient care is required. For other diseases and conditions, a case-based, didactic approach may be substituted. In these cases, the resident will demonstrate understanding of the diseases and condition via didactic instruction, case-based application, simulation, or other appropriate approach.

For these diseases and conditions, the resident will demonstrate an understanding of signs and symptoms, epidemiology, risk factors and etiology, pathogenesis, pathophysiology, clinical course, and a comprehensive pharmacotherapy treatment plan.

In the list, an asterisk (*) indicates that direct patient care is required. The other items are required but may be covered in the case-based, didactic approach described above.

Pulmonary

1. *Acute respiratory distress syndrome
2. *Severe asthma exacerbation
3. *Acute COPD exacerbation
4. *Acute pulmonary embolism
5. *Acute pulmonary hypertension
6. *Drug-induced pulmonary diseases
7. *Mechanical ventilation
8. Chronic severe pulmonary hypertension
9. Pneumothorax and hemothorax
10. Chest tubes
11. Cystic fibrosis
12. Inhaled medication administration

Cardiovascular

1. *Advanced cardiac life support
2. *Arrhythmias (atrial and ventricular)
3. *Acute decompensated heart failure
4. *Acute coronary syndromes
5. *Hypertensive emergencies and urgencies
6. *Shock syndromes
7. Acute aortic dissection

8. Pericardial tamponade
9. Mechanical devices (e.g., intra-arterial balloon pumps, ECLS, ECMO)
10. Invasive and non-invasive hemodynamic monitoring
11. PALS

Renal

1. *Acute kidney injury
2. *Acid-base imbalance
3. *Fluid and electrolyte disorders
4. *Contrast-induced nephropathy
5. *Drug-induced kidney diseases
6. Rhabdomyolysis
7. Syndrome of inappropriate antidiuretic hormone
8. Continuous renal replacement therapies/hemodialysis

Neurology

1. *Status epilepticus
2. *Ischemic stroke
3. *Subarachnoid hemorrhage
4. *Intracerebral hemorrhage
5. *Critical illness polyneuropathy
6. Intracranial pressure management
7. Traumatic brain injury
8. Spinal cord injury
9. Central diabetes insipidus
10. Cerebral salt wasting
11. Encephalopathy in coma
12. EEG or bispectral monitoring for level of sedation
13. Ventriculostomies
14. Targeted temperature management/induced hypothermia

Gastrointestinal

1. *Acute upper and lower gastrointestinal bleeding
2. *Acute pancreatitis
3. Fistulas
4. Ileus
5. Abdominal compartment syndrome

Hepatic

1. *Acute liver failure
2. *Complications of cirrhosis
3. *Drug-induced liver toxicity

Dermatology

1. Burns
2. Stevens-Johnson syndrome
3. Toxic epidermal necrolysis
4. Erythema multiforme
5. Drug Reaction (or Rash) with Eosinophilia and Systemic Symptoms (DRESS)

Immunology

1. Acute transplant rejection
2. Graft-versus-host disease
3. Management of the immunocompromised patient
4. Acute management of a solid organ or bone marrow transplant patient
5. Medication allergies/desensitization

Endocrine

1. *Relative adrenal insufficiency
2. * Hyperglycemic crisis
3. *Glycemic control
4. Thyroid storm/ICU hypothyroid states

Hematology

1. *Acute venothromboembolism
2. *Coagulopathies
3. *Drug-induced thrombocytopenia
4. *Blood loss and blood component replacement
5. Anemia of critical illness
6. Drug-induced hematologic disorders
7. Sickle cell crisis
8. Methemoglobinemia

Toxicology

1. *Toxidromes
2. *Withdrawal syndromes
3. Drug overdose
4. Antidotes/decontamination strategies

Infectious Diseases

1. *CNS infections
2. *Complicated intra-abdominal infections
3. *Pneumonia
4. *Endocarditis
5. *Sepsis

6. *Fever
7. *Antibiotic stewardship
8. *Clostridium difficile associated diarrhea
9. Skin and soft-tissue infection
10. Urinary tract infections
11. Wound infection
12. Catheter-related infections
13. Infections in the immunocompromised host
14. Pandemic diseases
15. Febrile neutropenia
16. Acute osteomyelitis

Supportive Care

1. *Pharmacokinetic and pharmacodynamic alterations in critically ill
2. *Nutrition (enteral, parenteral nutrition, considerations in special patient populations)
3. *Analgesia
4. *Sedation
5. *Delirium
6. *Sleep disturbances
7. *Rapid sequence intubation
8. *Venous thromboembolism prophylaxis
9. *Stress ulcer prophylaxis
10. Pharmacogenomic implications
11. Oncologic emergencies
12. Other devices
    1. Intravascular devices
    2. Peripheral nerve stimulators
    3. IV pumps

Related Topic

The resident will be able to describe key landmark events in the evolution of critical care pharmacy as a specialty and summarize the findings from key studies documenting the association of critical care pharmacy services with favorable health care outcomes.

Handbook Review/Approvals

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