Residency Manual
Conemaugh Memorial Medical Center, Duke LifePoint Healthcare
PGY1 Residency Program

Purpose

The purpose of this manual is to define the policies and procedures for the residency program at Conemaugh Memorial Medical Center.

Overview of PGY1 Residency Program

The American Society of Health-System Pharmacists (ASHP) defines a residency as a structured, postgraduate program that achieves a predetermined set of outcomes. The residency should build upon and compliment the practice experience and education obtained through their academic and prior work experiences that each resident brings to the program. The residency should also be individualized to each resident's interests and to the practice site.

Pharmacists completing this residency program will mature into competent, confident practitioners able to provide pharmaceutical care in multiple clinical settings. These pharmacists will enter practice with the knowledge, skills, and attitudes necessary to meet current and future challenges in pharmacy. Through professional growth they will develop the clinical skills to optimize drug therapy and to educate others. They will also learn the value of a team approach to patient care and the importance of self-learning and self-assessment.

Program Description

The residency is a twelve-month post-graduate program which begins on July 1st of each year. The goals and objectives of each rotation are designed to meet or exceed ASHP standards, while allowing enough flexibility to develop the specific interests of the resident. The residency program utilizes the ASHP Residency Learning System model to instruct the resident and evaluate progress.

Required 4 or 5 Week Rotations

- Ambulatory Care (Focused)
- Critical Care
- Infectious Disease
- Oncology
- Pain Management
- Internal Medicine
- Transitions of Care
- Trauma

Elective 4 or 5 Week Rotations (Required rotations may be repeated for an elective)

- Cardiology*
- Emergency Medicine
- Neonatal Intensive Care*
- Psychiatry*
- Trauma with Focus on General Surgery*
- Others as Requested and Available

Required Longitudinal Experiences

- Administration/Management
- Ambulatory Care (including HIV clinic)
- Research Project
- Staffing

Elective Longitudinal Experience

- Teaching Certificate Program

*Rotations marked with an asterisk are more independent rotations where a pharmacist does not practice in that given clinical area. These rotations are available upon request and will need to be approved by the RPD after a thorough review of pharmacademic evaluations indicating the resident has demonstrated an ability to practice more independently and the RPD's review has been discussed with the RAC committee

Typical Timing of Rotations:

July-November	December-June	Anytime During Year
• Critical Care • Infectious Disease • Pain Management	• Electives • Preceptor Education • Trauma	• Ambulatory Care (Focused) • Oncology • Transitions of Care

Program Director
Dr. Bret Chapman, PharmD, BCPS, BCIDP

Associate Program Director/Coordinator
Dr. Stephanie Thomas, PharmD, BCPS, CDE

Facilities
Conemaugh Health System, Duke LifePoint Healthcare, is the largest healthcare provider in West Central Pennsylvania, serving over a half-million patients each year through the Conemaugh Physician Group and Medical Staff, a network of hospitals, specialty clinics, and patient-focused programs. Conemaugh's 4,500+ employees and 350+ physicians are committed to excellence and repeatedly earn state and national recognition for exceptional clinical outcomes.

Conemaugh Memorial Medical Center (MMC), the largest member of the Conemaugh Health System, is an over 500-bed acute care teaching hospital. A community and regional-referral hospital, MMC has been recognized as a top 100 hospital in the United States in both orthopedics and cardiac care. MMC offers highly specialized services including a Level I trauma center, a Level III NICU, cardiothoracic surgery, clinical pharmacology, interventional radiology, intensive care medicine & surgery, and medical oncology.

Eligibility
Graduate or candidate for graduation with a Doctorate of Pharmacy degree from an ACPE accredited pharmacy school or have a Foreign Pharmacy Graduate Equivalency Committee (FPGEC) certificate from the National Association of Boards of Pharmacy (NABP. Applicants should also have a strong desire to develop clinical skills for a career in clinical pharmacy practice in an institutional or ambulatory care setting.

Applications
Applications for the residency positions should be received by January 15th of each year. Candidates should complete an online application form, upload official college transcripts & curriculum vitae, and provide 3 professional references to the Pharmacy Online Residency Centralized Application Service (PhORCAS). Applicants will be screened by the Residency Program Director and scored on their curriculum vitae, letters of recommendation, and pharmacy school transcripts. A minimum score of 5 out of 9 will be needed to be considered for an on-site interview and no more than 24 candidates will be invited for on-site interviews. After on-site interviews, residency candidates will be ranked by all preceptors by a standardized system and submitted for Residency Match.

Licensure
All residents participating in the program must be licensed to practice pharmacy in the state of Pennsylvania by August 31st. Failure to become licensed in Pennsylvania by this time will initiate a performance improvement plan where the resident will have until September 30th to become licensed. Failure to become licensed by September 30th will result in dismissal from the program with no exceptions. The licenses of all residents must be displayed in Conemaugh Memorial Medical Center's pharmacy department.

Orientation
To ensure that residents are knowledgeable about the institution and able to provide direct patient care, all residents will be required to attend orientation and to train in the pharmacy department. The week prior to the official start date, incoming residents will be afforded the opportunity to train with the outgoing residents. This training will consist of direct patient care activities. The official start date of the residency program begins July 1 of each year. The two month long pharmacy department orientation, which begins July 1, includes required hospital orientation activities, and focuses on the central pharmacy staffing responsibilities as well as clinical services covered by the on-call program. This is to ensure that each resident will be knowledgeable about all aspects of the pharmacy services and systems offered at Conemaugh Memorial Medical Center. Residents should be competent to staff in central pharmacy after orientation is completed.

Educational Goals and Objectives for Residency
See Appendix 1

Research Project
Each resident must complete a research project that meets ASHP accreditation criteria. The resident is encouraged to choose a topic which, besides being an area of interest to the resident, will also contribute to the advancement of pharmacy practice at Conemaugh Memorial Medical Center. The resident will select one or more preceptors to serve as advisors for the project. The project is also required to be in compliance with Conemaugh Memorial Medical Center's Office of Research Administration (ORA) policies and may require Investigational Review Board (IRB)review if the project meets the definition of human subjects research. Residency projects will be presented at the Eastern States Conference in May, then completion of manuscript will be required. This manuscript may be submitted for publication by the end of the program.

The following is a general timetable for completion of the project (a more detailed timeline can be found in Appendix 2)

July	Complete CITI Training Determine project idea & preceptor for project Arrange meeting with assigned research personnel Literature review completion
August	Completion of Project Proposal with preceptor approval Finalize and send with approval forms to ORA
September	ORA/IRB Review
October	Abstract submitted for ASHP Midyear poster session (check website for due date)
November	Poster completed and printed
December	Presentation of poster at ASHP Midyear Research/Data Collection when project approval received Contact MIS for data collection as necessary
January	Graduate Medical Education Research Symposium submission deadline
February	Initial data results Eastern States registration for platform presentation (check website for due date)
April	Eastern States platform presentation abstract due (check website for due date)
May	Presentation at the Eastern States Conference Presentation to applicable committees
June	Final project and manuscript completed Time table for publication established.

Rotation Projects
In addition to the major project, each resident will be responsible for smaller projects to be completed during specific rotations (drug utilization evaluation, formulary monographs, review articles, journal club). These projects will involve problem solving and will be assigned and evaluated by the preceptor responsible for that particular rotation.

The Residency Binder
Each resident must maintain a binder containing examples of available information from the residency year such as presentations and papers prepared by the resident, drug information questions, reported adverse drug events, documentation of patient education, P&T committee assignments, and consults (but not limited to these items).

Teaching and Education
The resident is encouraged to attend monthly grand rounds and daily noon conferences either in the Family Medical Center or the Internal Medicine department. Each resident is expected to present two noon conference topics to the Family Medicine Residency Program and Internal Medicine Residency Program.

Each resident will present lectures or prepare teaching exercises for pharmacists, pharmacy students, nurses, and residents. Each resident will be involved in lectures to nursing students at area nursing schools as schedule permits. The resident may attend other seminars as his/her schedule permits with the approval of the preceptor.

Residents will be required to assist in precepting pharmacy students, including being the primary preceptor for a student during the Preceptor Education rotation.

Pre-Residency Self-Evaluation and Interest Forms
Prior to beginning the residency year, each resident shall complete a Self-Evaluation in Pharmacademic identifying areas for improvement through the residency year. Additionally, each resident shall complete an Incoming Interest Form in order to highlight potential areas where the resident can see themselves practice in the future. The program director or preceptor-designee shall work with the resident to develop a broad plan with specific goals established. The goals must relate to practice skills required in contemporary pharmacy practice and will describe the competencies to be attained in the residency program. Memorial Medical Center is committed to giving the resident a comprehensive experience in all areas of pharmacy practice to develop the resident's abilities to his/her fullest potential.

Pharmacademic Evaluations
The resident will receive an orientation to the Pharmacademic system used for evaluation of the resident and the residency program. The resident will be responsible for reading corresponding Learning Experience Descriptions prior to each rotation. Residents will complete a Summative Self-Evaluation, Preceptor Evaluation, and Learning Experience Evaluation at the end of each learning experience. The preceptor will complete a Summative Evaluation of the resident's performance with the corresponding learning objectives. Informal feedback will be completed on a daily basis as well as an informal midpoint evaluation so the resident may make improvements continually.

All evaluations must be completed within one week of the conclusion of each rotation. For each rotation there will be three evaluation forms: resident's evaluation of rotation and preceptor, resident's self-evaluation, and preceptor's evaluation of the resident. All evaluations must be discussed with the resident by the last day of the rotation.

<u>Preceptor Evaluations</u>
Preceptor evaluation of the resident will be through informal conversations throughout the rotation and formal evaluations known as Summative Evaluations.

- Summative Evaluations:

Completed at the end of the learning experience. The preceptor will evaluate the goals based on the objectives for those goals. The forms are available in this manual. The preceptor will be responsible for completing both the formative and summative evaluations for the resident and then forwarding it to the residency program director. This evaluation is to be discussed with the resident and signed by both the evaluating preceptor and the resident prior to forwarding the form to the program director.

- Quarterly Evaluation

The Residency Program Director or preceptor-designee will review the resident's progress quarterly (September/December/March/June) based upon the resident's evaluated progress in service, teaching, research, and overall residency performance in attaining the goals and objectives of the program. This evaluation should include an update of the checklist of each of the objectives for the residency. By the final quarterly evaluation, most if not all residency objectives should be met. The program director will utilize the monthly evaluations of the resident to prepare this summary. The quarterly evaluation will be completed with the resident and sent to the resident & all preceptors through Pharmacademic.

Resident Evaluation of the Preceptor and Learning Experience

The resident will be responsible for evaluation of the preceptor and learning experience.

Resident Self-Evaluation

A major expectation of the resident is that he/she will be capable of evaluating the quality of his/her own work and self-direct his/her own learning. The resident should use the criteria associated with each objective as a guideline to informally evaluate him/herself throughout the rotation.

Formative evaluations should be the basis for documenting resident self-evaluation since this method relies on the use of criteria that will allow the resident to evaluate him/herself with objective data. The resident will also be asked to complete a self-evaluation form at the end of each one-month rotation and quarterly during longitudinal rotations. Residents should also review and evaluate themselves based on the summative evaluation throughout their rotation and at the end of the rotation prior to the preceptor reviewing it with them.

Professional Affiliations

All residents of ASHP accredited residencies must maintain an active membership in ASHP. Dues for these memberships will be the responsibility of the resident; however, $200 is available per resident for membership dues or books.

Professional Meetings

All residents are expected to participate in professional meetings at the local, state, and national levels. Listed below are recommended meetings:

- The ASHP Midyear Clinical Meeting will be held in December. Attendance is required at daily programs and funding is available.
- All residents will attend the Eastern States Conference in May and are required to complete a presentation on his/her research project. Residents must also attend presentations given by residents from other programs.

Staffing

Each resident will be required to staff the pharmacy every other weekend. Once a resident has been scheduled to cover a specific shift, the resident is responsible for that shift and must arrange coverage if he or she is unable to work.

Duty-Hour Requirements
Each resident will receive the Duty-Hours Policy created by GME and will apply to the pharmacy residency with exceptions are per policy. Any moonlighting will apply to the duty-hours requirement, as per policy. All moonlighting must be discussed with Residency Program Director.

Benefits
All residents funded by Conemaugh Memorial Medical Center will receive the same benefits. A representative from human resources will ensure that all residents are given an orientation to the benefits.

Health Care: See benefits manual

Copying: Copying machine available in the pharmacy for work-related items.

Cell phones: Personal cell phones will require downloading the DocHalo application and are used instead of pagers at Conemaugh Memorial Medical Center. This process will be explained during orientation. Some reimbursement is available for personal cell phone use.

Parking: Free, designated resident parking

Meals: Monthly food stipend allocated for each resident when working in hospital

Wellness Center: Free membership

Travel: Each resident will be eligible for reimbursement to help cover the expense of travel to professional meetings (ASHP Midyear/Eastern States Conference) as approved by the Residency Program Director and Management.

Paid Time Off: Time off for vacations, meetings, conferences, interviews, and sick time is given to each resident in a vacation "bank." Twenty Paid-Time-Off (PTO) days are given to each resident for the year (conference time comes out of the 20 PTO Days). This time off begins accruing at the date of hire. Time above the twenty days must be made up. Holidays are not included in this allotment. There are 4 paid holidays the resident will not work and 2 holidays the resident will be scheduled to work in the pharmacy (the resident will be given an additional day off for the holiday worked). These holidays include: Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas, & New Years. Scheduled holidays worked will be assigned by the Residency Program Director at the beginning of the residency year. Scheduled Administrative leave may be granted depending on the nature of the request. All requests for leave will be in writing. If an extended illness or other issue arises, it is possible for the resident to petition the Residency Program Director and Residency Advisory Committee to consider special arrangements allowing completion. Any such arrangements may not result in additional pay and must assure all program requirements are met including practice time required.

Leave of Absence Policy

PGY1 Pharmacy Residents will be eligible for all applicable leaves of absence (Family Leave [FMLA], General LOA, and Military LOA) according to the Conemaugh Health System employee handbook. This employee handbook will be emailed to all candidates invited for on-site interviews. Please refer to employee handbook for full details. Family leave (including FMLA), does require at least 12 months of service and a minimum of 1,250 hours worked in the previous 12 months to be eligible. For residents who have worked in other capacities such as pharmacy technician or pharmacy intern, years and hours worked will be honored in accordance with these policies. For those that are not eligible, Family Medical Leave of no more than 12 weeks may be granted by the RAC committee and Residency Program Director for the following reasons:

- Birth of a child
- Care for a spouse, child, or parent with a serious health condition

Please see the employee handbook definitions section for "serious health condition"

General LOA (Sick leave) and Military LOA is eligible to all employees regardless of service time. Please see employee handbook for full details. General LOA may be granted for no more than 8 weeks.

All leave requests will be submitted through Conemaugh's third party leave administrator and advanced notice is requested in applicable scenarios.

Given that PGY1 Residency is a short term employment contract, it is important that leaves of absences do not result in excessive delays to graduation and development of incoming residency classes. For this reason, LOA whether Family or General should not prohibit a resident from completing all requirements of the 12 month residency in a given 15 month calendar period. For example, if a resident starts their residency year on July 1 with the rest of their residency class, they must fulfill all requirements from completion of the PGY1 Residency Program by September 30 regardless of leaves of absence. Failure to complete the 12 month residency and requirements for completion by September 30th will result in dismissal from the program.

Dismissal Policy

Immediate dismissal from the program without a Performance Improvement Plan may occur if a resident violates the Conemaugh Health System Code of Conduct and Ethics. This can be found in the Conemaugh Health System Employee Handbook and will be given to all candidates invited for an on-site interview. Immediate dismissal may also occur for violation of the residency Licensure policy or violation of HIPAA regulations.

Performance Improvement Plan

Other than those circumstances outlined in the Dismissal Policy, all other dismissals will be preceded by a resident Performance Improvement Plan. The Performance Improvement Plan will be tool to formally document and track areas of the residency objectives, residency goals, or completion requirements that are not being met or are not on track to be met by the end of the residency. All objectives, goals, and completion requirements will be reviewed with the RPD or designee initially and quarterly via the Residency Quarterly Training Plan. When the RPD or other preceptor notes a deficiency (i.e. needs improvement on a particularly residency objective) the Performance Improvement Plan will address the issue in a step wise fashion as below:

1. Verbal coaching- This may take place during the quarterly training plan visit or any other designated meeting time. The RPD and preceptor will meet with the resident to discuss the deficiency. The resident will be made aware that this is a formal verbal coaching and the first step in the Performance Improvement Plan. The RPD, preceptor, and resident will come up with a plan to overcome the deficiency.
2. Written Performance Improvement Plan – If after verbal coaching the deficiency identified still persists. The RPD and preceptor will meet with the resident. The resident will be made aware that this is a formal written Performance Improvement Plan that will documented in pharmacademic via the Quarterly Training Plan. The RPD, Preceptor, and resident will write down the corrective action plan including the goal in the next 30 days that the resident must meet. A required 30 day follow meeting will be scheduled to ensure the goal was met.
3. Dismissal from the Program. If the deficiency still exists at the 30 day follow up meeting and the goal outlined in the Written Performance Improvement Plan is not met, the resident will be dismissed from the program.

Any single objective that is deemed "Needs Improvement", may not necessarily warrant a Performance Improvement Plan. Determining the need for a Performance Improvement Plan will be left to the discretion of the RPD, preceptor, or RAC committee. However, if a resident obtains more than one "Needs Improvement" for the residency year, an automatic Performance Improvement Plan starting with the Verbal coaching will be initiated that focuses on both the objectives that were deemed "Needs Improvement".

Requirements to receive a PGY1 Pharmacy Residency Certificate:
A Certificate of Residency Training will be awarded upon satisfactory completion of the program.

Requirements for Completion:

Requirement	**Date Completed**
Obtain Pennsylvania Pharmacist License by August 31st (Setpember 30th if performance improvement plan initiated)	
Objective Achievement: Minimum of 30 out of 33 program-required objectives rated as Achieved for the Residency (ACHR)	
No objectives rated "Needs Improvement" on final rating	
Complete all required learning experiences	
Complete all assigned evaluations on PharmAcademic®	
Complete medication use evaluation (MUE) and present poster at ASHP midyear Clinical Meeting	
Complete residency research project and present platform presentation at Eastern States Residency Conference	
Complete a manuscript of your residency research project that would be suitable for publication (full publication not required)	
Complete one Journal Club Presentation	
Complete a STEP analysis for a medication up for formulary approval and present at P&T (Standard R2.2.1)	
Staff 22 weekend shifts in Central Pharmacy (Saturday and Sunday shifts)	
Staff 2 holidays in Central Pharmacy	
Complete 9 on-call weeks	
Complete Noon Conference Presentation for Internal Medicine	
Complete Noon Conference Presentation for Family Medicine	

Teaching Certificate Program
An elective teaching certificate is available for completion by the resident. Residents interested in obtaining a teaching certificate will develop a portfolio of teaching activities that occur during the residency training year. The following must be completed to obtain a teaching certificate:

Requirement	**Date Completed**
Obtain continuing education credits assigned by the RPD (Preceptor Playbook)	
Participate in Group Discussions on CE Modules	
Precept APPE student on Internal Medicine	

Rotation	
Present didactic lecture to Conemaugh School of Nursing or UPJ School of Nursing	

General Resident Responsibilities

Daily:

- Residents will report to assigned preceptors and be responsible for all assigned daily duties.

Weekly:

- Residents will attend all required GME residency conferences unless excused by program director or preceptor

Monthly:

- Residents will provide pharmacotherapy education to health care professionals in large and small group formats
- Residents may attend Pharmacy and Therapeutics Committee meetings as well as other assigned meetings.
- Residents will complete preceptor, rotation and self-evaluation forms at the end of each rotation using PharmAcademic.

Quarterly:

- Residents will complete the PharmAcademic self-evaluation based on learning objectives for the program.
- Residents will meet individually with the residency director to discuss progress and evaluation.
- If the residents feel it would be helpful, the residents will meet as a group with the residency director to discuss progress, concerns, etc…

Annually:

- Residents will complete a residency project approved by a residency preceptor and the residency director and will submit a written manuscript to the residency director and project preceptor at the end of the residency. The written manuscript is in the style that would be sufficient for submission to a peer reviewed journal.
- Residents will prepare and present the results of their research project at the Eastern States Residency Conference

Pharmacy Resident Job Description

See Appendix 3

Clinical Pharmacy On-Call Program

See Appendix 4

Appendix 1: Residency Goals & Objectives

Competency Area R1: Patient Care
GOAL R1.1 In collaboration with the health care team, provide safe and effective patient care to a diverse range of patients…following a consistent patient care process.
Objective R1.1.1: (Applying) Interact effectively with health care teams to manage patients' medication therapy.
Objective R1.1.2: (Applying) Interact effectively with patients, family members, and caregivers.
Objective R1.1.3: (Applying) Collect information on which to base safe and effective medication therapy.
Objective R1.1.4: (Analyzing) Analyze and assess information on which to base safe and effective medication therapy.
Objective R1.1.5: (Creating) Design or redesign safe and effective patient-centered therapeutic regimens and monitoring plans (care plans).
Objective R1.1.6: (Applying) Ensure implementation of therapeutic regimens and monitoring plans (care plans) by taking appropriate follow-up actions.
Objective R1.1.7: (Applying) Document direct patient care activities appropriately in the medical record or where appropriate.
Objective R1.1.8: (Applying) Demonstrate responsibility to patients.
GOAL R1.2 Ensure continuity of care during patient transitions between care settings.
Objective R1.2.1: (Applying) Manage transitions of care effectively.
GOAL R1.3 Prepare, dispense, and manage medications to support safe and effective drug therapy for patients.
Objective R1.3.1: (Applying) Prepare and dispense medications following best practices and the organization's policies and procedures.
Objective R1.3.2: (Applying) Manage aspects of the medication-use process related to formulary management.
Objective R1.3.3: (Applying) Manage aspects of the medication-use process related to oversight of dispensing.
Competency Area R2: Advancing Practice and Improving Patient Care
Goal R2.1: Demonstrate ability to manage formulary and medication-use processes, as applicable to the organization.
Objective R2.1.1 (Creating) Prepare a drug class review, monograph, treatment guideline, or protocol.
Objective R2.1.2 (Applying Participate in a medication-use evaluation.
Objective 2.1.3: (Analyzing) Identify opportunities for improvement of the medication-use system.
Objective 2.1.4: (Applying) Participate in medication event reporting and monitoring.
GOAL R2.2 Demonstrate ability to evaluate and investigate practice, review data, and assimilate scientific evidence to improve patient care and/or the medication use system.
Objective R2.2.1: (Analyzing) Identify changes needed to improve patient care and/or the medication-use systems.
Objective R2.2.2: (Creating) Develop a plan to improve the patient care and/or medication-use system.
Objective R2.2.3: (Applying) Implement changes to improve patient care and/or the medication-use system.
Objective R2.2.4: (Evaluating) Assess changes made to improve patient care or the medication-use system.
Objective R2.2.5: (Creating) Effectively develop and present, orally and in writing, a final project report.
Competency Area R3: Leadership and Management
GOAL R3.1 Demonstrate leadership skills.
Objective R3.1.1: (Applying) Demonstrate personal, interpersonal, and teamwork skills critical for effective leadership.
Objective R3.1.2: (Applying) Apply a process of on-going self-evaluation and personal performance

improvement.
GOAL R3.2 Demonstrate management skills.
Objective R3.2.1: (Understanding) Explain factors that influence departmental planning.
Objective R3.2.2 (Understanding) Explain the elements of the pharmacy enterprise and their relationship to the healthcare system.
Objective R3.2.3: (Applying) Contribute to departmental management.
Objective R3.2.4: (Applying) Manages one's own practice effectively.
Competency Area R4: Teaching, Education, Dissemination of Knowledge
GOAL R4.1 Provide effective medication and practice-related education to patients, caregivers, health care professionals, students, and the public.
Objective R4.1.1: (Applying) Design effective educational activities.
Objective R4.1.2: (Applying) Use effective presentation and teaching skills to deliver education.
Objective R4.1.3: (Applying) Use effective written communication to disseminate knowledge.
Objective R4.1.4: (Applying) Appropriately assess effectiveness of education.
GOAL R4.2 Effectively employs appropriate preceptors' roles when engaged in teaching.
Objective R4.2.1: (Analyzing) When engaged in teaching, select a preceptors' role that meets learners' educational needs.
Objective R4.2.2: (Applying) Effectively employ preceptor roles, as appropriate.

*Examples and criteria for each objective can be found on ASHP's website at: https://www.ashp.org/Professional-Development/Residency-Information/Residency-Program-Resources/Residency-Accreditation/PGY1-Competency-Areas

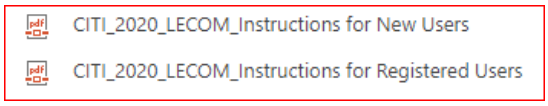
Appendix 2: Timeline for Research Project Completion

Timeline Milestone Summary

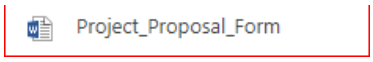
START of Residency Year						END of Residency Year					
July	**August**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**January**	**Feb.**	**March**	**April**	**May**	**June**
	1st	**1st**	**1st**	**11th**		**15th**	**15th**		**1st**		
	15th								~ end of ~	~week 1 ~	

By 8/1:

- Complete **CITI training**.
  - *http://chs-research.sp.conemaugh.org/_layouts/15/start.aspx#/Forms/Forms/AllItems.aspx*
    - Scroll to the bottom of the page:



  - Email confirmation to Theresa McCreary, TMcCrea@conemaugh.org
    - cc Tom Simunich (tsimunic@conemaugh.org)
- Receive preceptor approval for your project idea
- Complete as much of the **Project Proposal Form** (a MS Word fillable form) as you are able.
  - *http://chs-research.sp.conemaugh.org/_layouts/15/start.aspx#/Forms/Forms/AllItems.aspx?RootFolder=%2FForms%2F%5FQI%2DPI%2C%20Retrospective%20Research%2C%20Survey%20Project%20Forms&FolderCTID=0x0120008FEA24ECA2A5664C8B31D7A0C0DD01A6&View=%7B11EA3667%2DF2AE%2D4EC5%2DAEDC%2D6B362447BF25%7D*



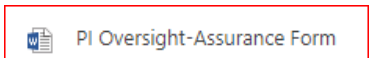
  - Utilize NetLearning, your preceptor, mentors, faculty, and peers.
  - List yourself as the Principal Investigator (PI) and your preceptor as an Investigator.
  - Although Tom S. will finalize the statistical analysis plan, attempt a draft of that section.
- If you need additional assistance, schedule meeting via email with Tom Simunich, tsimunic@conemaugh.org, and your preceptor:
  - Use MS Outlook Meeting Request
  - Tom's Availability:
    - Mondays
    - Wednesday afternoons
    - Fridays

❖ If you have questions about whether specific data (variables) can be extracted electronically from EPIC, contact Marie Bernard, MBernard@conemaugh.org. For questions regarding Epic forms/ Order Sets/ etc., contact Mark Kline (CMMC MIS), mrkline@conemaugh.org; he is the liaison between the CMMC ORA & CMMC MIS EPIC Staff.

- ❖ If you need ICD10 codes/billing codes: Contact ????? with coding department (????@conemaugh.org). These should be included in your project proposal when requesting specific diagnoses/ comorbidities/ procedures/ complications/ etc.

8/15:

- Have your preceptor review your Project Proposal
  - Revise as necessary
- After preceptor approves the first draft of your Project Proposal,
  - Email that draft to Tom Simunich, (tsimunic@CONEMAUGH.ORG).
- Tom will review your draft & return with revisions/ comments/ suggestions.
- Schedule meeting with preceptor & residency program director to address suggested changes.
- **Finalize** your Project Proposal, and email that version to Tom S.
- He will complete the final ORA review; if everything is in order, he will email you the **Department Chairperson (DC) & Residency Program Director (PD) Approval Form**.
  - Have your Department Chairperson (DC) **&** Residency Program Director (PD) review the final version of your Project Proposal.
    - If they approve, sign/date the Department/Program Approval Form
    - If your Dept. Chair &/or Prog. Dir. is a listed investigator, the responsibility transfers to the Asst. Chair &/or Asst. Prog. Dir. &/or a Faculty member
  - List yourself as the Principal Investigator (PI) and your preceptor as an Investigator.
- You, as the PI, **must** sign/date the **Principal Investigator Oversight Assurance (PIO) form**.
  - All (other) listed investigators *should* sign/date the PIO form on the line matching their designated study role.
  - *http://chs-research.sp.conemaugh.org/_layouts/15/start.aspx#/Forms/Forms/AllItems.aspx?RootFolder=%2FForms%2F%5FQI%2DPI%2C%20Retrospective%20Research%2C%20Survey%20Project%20Forms&FolderCTID=0x0120008FEA24ECA2A5664C8B31D7A0C0DD01A6&View=%7B11EA3667%2DF2AE%2D4EC5%2DAEDC%2D6B362447BF25%7D*



9/1:

- Email Tom Simunich, tsimunic@CONEMAUGH.ORG, the following:
  - Your completed **Project Proposal**, as an MS Word doc
  - Scan and email the signed/dated **DC/PD Approval form** as a pdf
    - ♦ Follow with signed/dated original via CMMC interoffice mail
  - Scan and email the signed/dated **PIO form**, as a pdf
    - ♦ Follow with signed/dated original via CMMC interoffice mail
- Upon receipt of these documents, Tom S. will progress your project to internal facilitated review of research (FRR) by two program directors and subsequent review by the CMMC Human Subject Protections Officer (HSPO).
- After FRR acceptance and HSPO approval, your project moves to the final step, administrative review and approval.
- **Tom S. will email you when your project has received final administrative approval.**
- Next step, see 'DATA COLLECTION' below.

Around 10/1:

- ASHP Midyear Abstract due for posters. (Make sure to check website for final due date)
- Follow ASHP guidelines, e.g. required Sections, word count limit, etc.
- Your Preceptor and PD must approve your abstract before submission

By 11/11:

- Poster templates can be found on the CMMC Research SharePoint site:
  - *http://chs-research.sp.conemaugh.org/_layouts/15/start.aspx#/Forms/Forms/AllItems.aspx?RootFolder=%2FForms%2F%5FPOSTER&FolderCTID=0x0120008FEA24ECA2A5664C8B31D7A0C0DD01A6&View=%7B11EA3667%2DF2AE%2D4EC5%2DAEDC%2D6B362447BF25%7D*
  -
- If you use a different template, you must add the required DLP/CMMC branding.
  - CHS logo and the GME poster seal
  - http://chs-research.sp.conemaugh.org/_layouts/15/start.aspx#/Forms/Forms/AllItems.aspx?RootFolder=%2FForms%2F%5FPOSTER&FolderCTID=0x0120008FEA24ECA2A5664C8B31D7A0C0DD01A6&View=%7B11EA3667%2DF2AE%2D4EC5%2DAEDC%2D6B362447BF25%7D

- ***Poster requirements per ASHP*** (see Midyear website for instructions)
  - Typical Poster Contents are:
    - Poster Title
    - Authors – in the appropriate order & **exactly** as their names & titles should appear on the poster
    - Introduction
      - refer to your project proposal: concise summary of evidenced-based literature review, problem statement, project aim, objectives (space permitting)
    - Methods (refer to your project proposal)
      - Given that you won't have results at this time, typically include:
        - Hypothesis(es)
        - Expected sample size or Target sample size to achieve a statistical power of at least 80.
        - Inclusion / Exclusion criteria
        - Outcomes/ End points and perhaps measures
    - Results: Pending
    - Discussion: Pending
    - Conclusion: Pending
    - References
    - Disclosures
    - Other requirements per ASHP (see Midyear website for instructions)
- Goal: Have printed poster in-hand the week before Midyear.

Tom S. will email you when your project has been approved.

Upon receipt of email notification of project approval from Tom S.,
DATA COLLECTION may begin:

- Contact (at least by email) Marie Bernard (MBernard@conemaugh.org)
  - [cc] your preceptor, your PD, and Tom S.
  - Attach the approved (and final) version of your project.
  - She will assign a CMMC EPIC data report writer from MIS to electronically extract the data

    - Whether contact is by email or by phone, be sure to send an email with at least the following information:
        - A deadline (a calendar date) for receipt of the data.
            - Be sure to have accounted for at least one SL:KDJJKDF
        - Copy and paste the following sections from your final project proposal into the body of the email:
            - Data collection time period
            - Inclusion & Exclusion criteria
            - Measures/ Outcomes Table
- Seven ***working*** days before the deadline,
    - Email the EPIC data report writer and [cc] Marie asking for an update on your data extraction and include the agreed upon deadline in that email.
- If you have not received data by deadline, email:
    - Marie and [cc] the EPIC data report writer, your preceptor & PD.

After data is obtained from MIS:

- If you need assistance in correlating &/or aggregating multiple data files, email the files to Tom with a description of what needs to be done & the end product.
- Once you (& your preceptor/ residency director) confirm that the data is 'correct' & as complete as possible, including insertion of data that has to be extracted via manual medical record review
    - Forward the data set to Tom S.
- Email Tom S. an MS Outlook meeting request for statistical analysis

Around 1/15:

- Research Symposium submission deadline. You will be allowed to submit a proposal with pending/preliminary data.

Around 2/15:

- Eastern states registration deadline (Make sure to check website for final due date)

Around 4/1:

- Eastern States platform presentation abstract due (Make sure to check website for final due date)

End of April

- Practice sessions will be scheduled for an afternoon for all residents.
- Eastern States scheduled April 25-27.
- Research Symposium date TBA, typically end of April or beginning of May

Appendix 3: Pharmacy Resident Job Description

CONEMAUGH HEALTH SYSTEM
Job Description

Job Title: PGY1 Pharmacy Resident Entity: Conemaugh Memorial Medical Center

Job Code Number: FLSA Status:

Department: Pharmacy ν Exempt □ Nonexempt

Reports To: PGY1 Pharmacy Residency Program Director

Supervises: Pharmacy Students, Pharmacy Technicians

Job Summary

The PGY1 pharmacy resident is a pharmacist who is training to provide comprehensive pharmaceutical care through clinical services, teaching, and integrated drug distribution. The PGY1 pharmacy resident provides services consistent with other services provided by pharmacists at Conemaugh Memorial Medical Center.

Mission

Responsibilities:
Core Competencies

Contributes to achievement of our Mission and Vision of the organization:

Adapting to Change-Responds to change with a positive attitude and a willingness to learn new ways to accomplish work activities and objectives.

Continuous Improvement-Acts to constantly improve the level of clinical and non-clinical outcomes and level of customer satisfaction in both individual and team work processes.

Customer Focus-Demonstrates concern for meeting or exceeding internal and external customers expectations/requirements in a manner that provides satisfaction for the customer.

Innovation/Creativity-Generates creative and valuable ideas and uses them to develop new or improved processes or services

Teamwork-Accomplishes tasks through working effectively with others and appreciating the value and commitment of every member.

Essential Responsibilities

The major job responsibilities of this position are: leadership, patient care, teaching, training, continuing education, and drug distribution.

- Maintains competency in unique aspects of drug therapy for all patients for which they provide care, including factors related to patients of all age groups.
- Provides pharmaceutical care by assisting health care professionals in:
  - Reviewing patient medication history
  - Educating patients on drug therapy
  - Establishing desired outcomes
  - Assessing patient demographics
  - Developing therapeutic plans
  - Determining alternatives for achieving outcomes
  - Developing drug monitoring plans
  - Implementing new drug regimens
  - Monitoring patient outcomes
  - Documenting medication related issues in patient chart
  - Interpreting laboratory data
  - Reviewing patient medication profiles
  - Monitoring pharmacokinetics of drug therapy
  - Monitoring potential adverse drug-drug and drug-food interactions
- Makes patient care rounds
- Monitors drug therapy to evaluate appropriateness of use, dose, dosage form, regimen, route, therapeutic duplication, and drug interactions.
- Participates in resident on call program
- Provides consultations as required
- Supervises Pharm.D. students.
- Conducts "STEP" evaluations and drug-usage projects as needed and reports results to the Pharmacy and Therapeutics Committee.
- Detects, monitors, documents, and reports adverse drug reactions and medication errors.
- Promotes the use of the Formulary by converting non-formulary orders to formulary when possible, but coordinates procurement of non-formulary drugs when necessary.
- Counsels patients on discharge medications as necessary.
- Maintains and updates a patient profile with demographics, diagnosis, allergies, and current medications.
- Discuss medication order clarifications with the prescriber, document any changes in patient and pharmacy records, and inform others of medication order changes.
- Reconciles pharmacy and nursing medication records.
- Verifies orders
- Reviews medication orders for appropriateness and checks doses of IV admixtures prepared by technicians.
- Provides presentations, publications, and other informative activities on drug-related topics to the health care community and general public.
- Identifies and acts upon cost avoidance in drug therapy by promoting more cost-effective regimens and by reducing waste.
- Documents clinical interventions using I-vents as part of the departmental documentation program.
- Insures proper technique and accurate preparation of all pharmaceutical products, including enteral, parenteral, chemotherapeutic, and investigational agents.

- Responsible for the accurate and timely dispensing of medication orders used by inpatients.
- Provides drug information to health care professionals and patients.
- Reviews physician orders for possible therapeutic problems, contraindications, interactions, allergies, and formulary status.
- Participates in continuing education programs, meetings, training programs and related activities.
- Insures compliance with controlled substance distribution.

Other Responsibilities

All other responsibilities as assigned in accordance with qualifications.

Job Qualifications

 Education

Required: Graduate or candidate for graduation with a Doctorate of Pharmacy degree from a pharmacy school in the United States, or have a Foreign Pharmacy Graduate Equivalency Committee (FPGEC) certificate from the National Association of Boards of Pharmacy (NABP).

Preferred:

 Experience

Preferred: Previous experience as a pharmacist or technician/intern in a hospital similar in scope to Conemaugh Memorial Medical Center.

 Certification/Licensure/Registration

Required: Licensed or eligible to be licensed as a pharmacist in Pennsylvania. Unlicensed candidates should obtain licensure as soon as possible and must be licensed within 2 months of hire or actively pursuing licensure (as determined by residency program director & pharmacy management—not to exceed an additional 30 days)

Physical Requirements

As defined by the physical requirements and working conditions form maintained by the Occupational Health Department.

Approvals

Employee Approval Date

Supervisor Approval Date

Department Director Approval Date

Senior Leader Approval Date

Revision Date: 5/18/2017, 3/1/19, 6/29/20, 5/18/21

PHYSICAL REQUIREMENTS AND WORKING CONDITIONS

NAME **SUPERVISOR**

JOB TITLE PGY1 Pharmacy Resident **DEPARTMENT Pharmacy**

EMPLOYMENT STATEMENT OF JOB REQUIREMENTS

A.	PHYSICAL DEMANDS	No	O	F	C	B.	Working Conditions (cont)	No	O	F	C
1.	Standing				X	8.	Confined Spaces		X		
2.	Walking			X		9.	Heights	X			
3.	Sitting		X			10.	Constant noise above 85 db	X			
4.	Lifting: Heavy-Max 65 lbs		X			11.	Intermittent noise above 85 db		X		
5.	Lifting: Heavy-Mod 40 lbs			X		12.	Vibration	X			
6.	Lifting: Mod – Max 25 lbs		X			13.	Fumes Irritant/Toxic	X			
7.	Lifting: Light-Max 10 lbs		X			14.	Dust More than nuisance	X			
8.	Carrying Est. Wt. 30 Lbs.		X			15.	Gases Type	X			
9.	Pushing Est. Wt. 250 Lbs.		X			16.	Lead	X			
10.	Pulling Est. Wt. 250 Lbs.		X			17.	Silica-Asbestos	X			
11.	Pulling hand over hand	X				18.	Chemical Types Chemotherapy Types Phenol		X		
12.	Climbing stairs		X			19.	Grease and Oils	X			
13.	Climbing - Use of legs/arms	X				20.	Working with machinery w/ moving parts	X			
14.	Balancing		X			21.	Working with moving vehicles	X			
15.	Stooping		X			22.	Working with ladders/scaffold	X			
16.	Kneeling	X				23.	Working below ground	X			
17.	Repeated Bending		X			24.	Working with hands on water	X			
18.	Crawling	X				25.	Working alone		X		
19.	Reaching: High/Low Level				X	26.	Hours worked weekly more than 40 (average) Other	X			
20.	Fingers movement-Repetitive			X		27.	Contact with patients		X		
21.	Repetitive twisting or pressure		X			C.	PROTECTIVE	No	O	F	C

	involving wrist or hands						**EQUIPMENT REQUIRED**				
22.	**Both hands required**				X	**1.**	**Gloves - Type**		X		
23.	**Both legs required**				X	**2.**	**Gown**		X		
24.	**Ability for rapid mental/muscular coordination simultaneously**		X			**3.**	**Mask**				
25.	**Oral communication/speak clearly**				X	**4.**	**Eye Wear - Type**		X		
26.	**Hearing – conversation**			X		**5.**	**Respirator – Type**	X			
26.	**Specific visual requirements**	**Near**		**Far**		**6.**	**Hearing Protection Type**	X			
27.	**Depth perception**	**Yes**		**No X**		**7.**	**Hard Hat**	X			
28.	**Color Vision**	**Yes X**		**No**		**8.**	**Boots - Type**	X			
29.	**Operation of truck/motor vehicle - Other**	**Yes**		**No X**		**9.**	**Body Protection**	X			
B.	**WORKING CONDITIONS**	**No**	**O**	**F**	**C**	**D.**	**EXPOSURE CATEGORIES**				
1.	**Outside**		X			**1.**	**Category I Tasks**				
2.	**Outside and Inside**		X			**2.**	**Category II Tasks**	X			
3.	**Heat between 90 – 100**		X			**3.**	**Category III Tasks**				
	Heat over 100	X									
4.	**Cold below 55**		X			**O=Occasionally - up to 25% time on job**					
						F=Frequently - 25 - 75 % time on job					
						C=Constantly - more than 75% time on job					
5.	**Temperature changes Excessive – Frequent**		X								
6.	**Wetness**	X									
7.	**Dry atmospheric conditions**	X				**DATE 3/1/19**					

Appendix 4. Clinical Pharmacy On-Call Program

Pharmacy Resident On-Call Guidelines

A. Responsibilities

1. Open Heart Blood Glucose Management
2. Pain Management Consults/Follow-Ups
3. Parenteral Nutrition
4. Anti Factor Xa Monitoring for Heparin
5. Argatroban Dosing & Monitoring
6. Other/Miscellaneous

B. Coverage

1. The resident will be available by cell phone.
2. The resident will be the primary pharmacist notified of any consults or questions. There will be a pharmacist preceptor on second call also scheduled.
3. If the resident is unable to answer the question or the caller requires a medication order (for cases where the pharmacist is allowed by protocol to order medications), the resident will discuss recommendations with the pharmacist on second call, then the resident should give the orders to the caller.
4. Debriefing between the resident and pharmacist preceptor will occur over the phone when discussing patients or afterwards in-person as needed.
5. After-hours consults (after 5PM):
    i. After-hours on-call will be from home and per policy will not count towards duty-hours.
    ii. Please ask the caller if the consult can be seen the following day.
    iii. Stat consults should be discussed with the preceptor on-call and orders can be given to the nurse.
    iv. If the resident is notified after-hours of a routine consult Sunday-Thursday, the resident will notify the appropriate pharmacist on that clinical team the following morning. For example, ID consults (other than vancomycin/aminoglycoside dosing) should be given to pharmacist covering ID, pain consults should be given to pharmacist covering pain, etc.
    v. If the resident is notified after-hours of a routine consult Friday-Saturday, the consult can be seen by the on-call resident the following day.

6. When the resident is on-call during a weekend shift, the resident is responsible for consults but is also to work in the main pharmacy as much as able.

    i. On the weekends, daylight hours on-call will be in hospital and per policy will count towards duty-hours.

    ii. If the resident is working on consults prior to the beginning of their shift and will be late arriving to the pharmacy for their shift, please call the pharmacy to let them know.

    iii. The resident should coordinate with other pharmacists working to determine when it is appropriate to leave the main pharmacy to see consults during scheduled shift. The resident should attempt to be in the main pharmacy to cover lunch breaks.

    iv. If a consult needs to be seen immediately or there are multiple consults and the resident cannot leave the pharmacy, the resident should notify the pharmacist preceptor on second call.

7. Upon the end of the on-call weekend and week, the on-call resident is responsible for preparing on-call handoff in EMR in order to smooth transition of care and identify areas where follow-up is needed.

C. On-Call Scheduling

1. The on-call schedule will be created monthly.

2. The resident will not be on-call more than one week per four-week schedule, this will allow 4 duty free days in any given 4 week period..

3. It is the responsibility of the resident to arrange for coverage if he/she cannot work the designated on-call shift.

D. Open Heart Blood Glucose Management

1. For post open-heart patients for glucose management on post-operative day 1, the resident should see the patient prior to 8AM if possible and discuss with pharmacist preceptor.

2. The resident will follow-up on blood glucose control during on-call days unless follow-up will occur by another pharmacist.

E. Pain Management Consults/Follow-Ups on Weekends

1. The resident on-call for the weekend will be provided handoff of current pain management consults and which patients should attempt to be seen for follow-up over the weekend.

2. Any new pain consults <u>over the weekend</u>, if called to see over the weekend, will be seen by the on-call resident and discussed with the on-call preceptor.

3. Any new pain consults after-hours during the week will be given to the rounding pharmacist for the pain service the next day. Any orders given that night should be summarized for the receiving pharmacist.

F. Parenteral Nutrition

1. Orders for parenteral nutrition must be completed prior to 1300 daily.
2. The resident is responsible for ordering the parenteral nutrition as well as to make sure active orders for lab monitoring.

G. Anti Factor Xa Monitoring for Heparin

1. Resident is responsible for adjusting heparin infusion rate based on anti factor Xa levels.
2. See Appendix A & Appendix B for downtime order sets
3. Order sets can also be found on the Intranet under MMC Physician Orders

H. Argatroban Dosing & Monitoring

1. Resident is responsible for determining initial argatroban dose and adjusting rate based on aPTT results.
2. See Appendix C for downtime order set
3. Order set can also be found on the Intranet under MMC Physician Orders

I. Other/Miscellaneous

1. The on-call resident will be notified of miscellaneous pharmacy consults not mentioned above, including diabetes education, insulin management, drug-information requests, Coumadin dosing, etc.
2. If follow-up is required, the resident will notify the next on-call resident.

Appendix A: Anti Xa Monitored Heparin IV Dosing Protocol Acute DVT/PE

PLEASE BE SURE TO TIME-DATE-SIGN ALL ENTRIES ON THIS PAGE

PHYSICIAN'S ORDER SHEET

PHYSORD

***NOTE: THIS PROTOCOL IS ONLY INTENDED FOR USE IN THE FOLLOWING CONDITION:

DOWNTIME ANTI Xa MONITORED HEPARIN IV DOSING PROTOCOL ACUTE DEEP VEIN THROMBOSIS (DVT) AND/OR PULMONARY EMBOLISM (PE)			
Date Ordered	**Time Ordered**	**Nurse's Signature**	**Time Checked**

A. Heparin 25,000 Units/250mL D5W (concentration = 100 Units/mL)
or ☐ Heparin 25,000 Units/250 ml 0.45% NSS (concentration = 100 Units/mL).

B. Patient's actual body weight (patient must be weighed the day of this order)

C. Initial bolus: 80 units /kg (Max 10,000 units). Initial infusion rate: 18 units/kg/hr
☐ NO Bolus

D. Monitoring:

- Anti Xa, PT, INR, aPTT, CBC with platelet count STAT if not done within 24 hours before starting heparin
- Check Anti Xa 6 hours after initiation of heparin therapy
- Repeat Anti Xa every 6 hours until 2 consecutive Anti Xa levels within 0.3-0.7 units/ml, then decrease Anti Xa monitoring to once daily
- Check CBC with platelet count every other day

E. Nursing to adjust infusion rate based on the following chart: (Maximum infusion rate 24 units/kg/hr)

Anti Xa Level (units/ml) < 0.15		Anti Xa Level (units/ml) 0.15 - 0.29		Anti Xa (units/ml) 0.3-0.7	Anti Xa Level (units/ml) 0.71-1	Anti Xa Level > 1 HOLD DRIP FOR 1 HOUR, NOTIFY PRESCRIBER
REPEAT BOLUS	**INCREASE INFUSION BY**	**REPEAT BOLUS**	**INCREASE INFUSION BY**		**DECREASE INFUSION BY**	DECREASE INFUSION BY
80 units/kg Max 10000 units	**4 units/kg/hr**	**40 units/kg Max 6000 units**	**2 units/kg/hr**	**NO CHANGE**	**2 units/kg/hr**	**3 units/kg/hr**

☐ NO Rebolus

F. Check Anti Xa 6 hours after any dosage adjustments; resume checking Anti Xa every 6 hours until 2 consecutive Anti Xa levels are between 0.3-0.7 units/ml then decrease Anti Xa monitoring to once daily.

Note: Two RN signatures required prior to the administration of heparin.
Two RN signatures required prior to adjustment of heparin.

Physician's Signature: _____ Date/Time: _____

INSTRUCTIONS

1. Orders must:
   - Be legible, dated, and timed
   - PRNs must include reason for use
   - Contain your signature
2. NURSES - All transcribed orders must include date, time transcribed and your signature with title.

Patient Information

Conemaugh Memorial Medical Center
Johnstown, PA 15905 814-534-9000

PHYSICIAN'S ORDER SHEET
DOWNTIME ANTI Xa MONITORED HEPARIN IV DOSING PROTOCOL ACUTE DEEP VEIN THROMBOSIS (DVT) AND/OR PULMONARY EMBOLISM (PE)

Rev 08/27/19 Reviewed 6/2021

Appendix B: Anti Xa Monitored Heparin IV Dosing Protocol Unstable Angina/NSTEMI or Afib

PLEASE BE SURE TO TIME-DATE-SIGN ALL ENTRIES ON THIS PAGE

PHYSICIAN'S ORDER SHEET

"PHYSORD"

DOWNTIME ANTI Xa MONITORED HEPARIN IV DOSING PROTOCOL
UNSTABLE ANGINA / NSTEMI OR ATRIAL FIBRILLATION

Date Ordered	Time Ordered	Nurse's Signature	Time Checked

A. Heparin 25,000 Units/250mL D5W (concentration = **100 Units/mL**)
or ☐ Heparin 25,000 Units/250 ml 0.45% NSS (concentration = 100 Units/ml).

B. Patient's actual body weight (patient must be weighed the day of this order)

C. Initial bolus: 60 units /kg (Max 4,000 units). Initial infusion rate: 12 units/kg/hr (Max initial infusion rate 1000 unit/hr)
☐ **NO Bolus**

D. Monitoring:
- Anti Xa, PT, INR, aPTT, CBC with platelet count STAT if not done within 24 hours before starting heparin
- Check Anti Xa 6 hours after initiation of heparin therapy
- Repeat Anti Xa every 6 hours until 2 consecutive Anti Xa levels within 0.3-0.7 units/ml, then decrease Anti Xa monitoring to once daily
- Check CBC with platelet count every other day

E. Nursing to adjust infusion rate based on the following chart: (Max infusion rate 22 units/kg/hr)

Anti Xa Level (units/ml) <0.15		Anti Xa Level (units/ml) 0.15-0.29		Anti Xa (units/ml) 0.3-0.7	Anti Xa Level (units/ml) 0.71-1	Anti Xa Level > 1 HOLD DRIP FOR 1 HOUR, NOTIFY PRESCRIBER
REPEAT BOLUS	INCREASE INFUSION BY	REPEAT BOLUS	INCREASE INFUSION BY		DECREASE INFUSION BY	DECREASE INFUSION BY
60 units/kg Max 5000 units	4 units/kg/ hr	30 units/kg Max 4500 units	2 units/kg/hr	NO CHANGE	2 units/kg/hr	3 units/kg/hr

☐ **NO Rebolus**

F. Check Anti Xa 6 hours after any dosage adjustments; resume checking Anti Xa every 6 hours until 2 consecutive Anti Xa levels are between 0.3-0.7 units/ml then decrease Anti Xa monitoring to once daily.
Note: Two RN signatures required prior to the administration of heparin.
Two RN signatures required prior to adjustment of heparin.

Physician's Signature: _____ Date/Time: _____

Patient Information

INSTRUCTIONS
1. Orders must:
   - Be legible, dated, and timed
   - PRNs must include reason for use
   - Contain your signature
2. NURSES - All transcribed orders must include date, time transcribed and your signature with title.

Conemaugh Memorial Medical Center
Johnstown, PA 15905 814-534-9000

PHYSICIAN'S ORDER SHEET
DOWNTIME ANTI Xa MONITORED HEPARIN IV DOSING PROTOCOL
UNSTABLE ANGINA/NSTEMI OR ATRIAL FIBRILLATION

Rev 8/27/19 Reviewed 6/2021

Appendix C: Argatroban

PLEASE BE SURE TO TIME-DATE-SIGN ALL ENTRIES ON THIS PAGE

PHYSICIAN'S ORDER SHEET

PHYSORD

After a STAT medication is ordered and scanned, this sheet may NOT be used again. Please draw a line through the remaining space.

DOWNTIME ARGATROBAN			
Date Ordered	**Time Ordered**	**Nurse's Signature**	**Time Checked**

Indication: Possible heparin-induced thrombocytopenia (HIT) or confirmed history of HIT
Do not use in patients with hepatic impairment (AST or ALT > 3 times upper limit of normal)
Discontinue heparin and/or enoxaparin, including heparin flushes
Remove heparin-coated catheters
If patient is concurrently receiving warfarin, argatroban has a large effect on PT/INR.
Hold infusion for 4 hours prior to PT/INR to obtain valid result

A. Argatroban 250mg/250 ml NSS

B. Patient's actual body weight _____ kg

C. Dosing:

Initial dose

- ☐ 2 mcg/kg/minute IV
- ☐ 0.5 mcg/kg/minute IV (if heart failure, multisystem organ failure, severe anasarca, or post cardiac surgery)
- ☐ _____ mcg/kg/ minute IV

☐ Standard Protocol Regimen

Desired aPTT range 45-90 seconds

aPTT	Dosing Adjustment
< 45 seconds	Increase infusion rate by 20% (Multiply current rate by 1.2 for new rate)
45-90 seconds	No dose adjustment
> 90 seconds	Hold infusion for 2 hours, then decrease rate in half (Divide current rate by 2 for new rate)
	Maximum infusion rate: 10 mcg/kg/minute

☐ Clinical Pharmacy to Manage

Baseline aPTT: _____

Desired aPTT range (1.5-2.5 times baseline) _____ to _____ seconds (Should not exceed 100 seconds)

aPTT	Dosing Adjustment
< 1.5 baseline	Increase infusion rate by 20% (Multiply current rate by 1.2 for new rate)
1.5 -2.5 baseline	No dose adjustment
> 2.5 baseline	Hold infusion for 2 hours, then decrease rate in half (Divide current rate by 2 for new rate)
	Maximum infusion rate: 10 mcg/kg/minute

Baseline Labs HIT panel (if no confirmed history of HIT)
CBC, PT/INR, AST/ALT, aPTT

Labs: CBC every other day
Heparin induced platelet antibody with reflex to serotonin release assay

Monitoring Initially - 2 hours after start of infusion, check aPTT - adjust according to chart

Check aPTT

- 2 hours after any change in dose, repeat in 4 hours until 2 aPTTs within range
- Every morning
- Immediately prior to restarting infusion if infusion has been held
- As clinically indicated due to suspected hemorrhage or thromboembolism

Physician's Signature: _____ Date/Time: _____

Patient Information

INSTRUCTIONS

1. Orders must:
   - Be legible, dated, and timed
   - PRNs must include reason for use
   - Contain your signature
2. NURSES - All transcribed orders must include date, time transcribed and your signature with title.

Conemaugh Memorial Medical Center
Johnstown, PA 15905 814-534-9000

PHYSICIAN'S ORDER SHEET
DOWNTIME ARGATROBAN

Rev 6/3/21 Reviewed 6/2021